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SECTION 01000

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## SECTION 01000

### GENERAL CONTRACT REQUIREMENTS

#### PART 1 GENERAL

##### 1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

##### CODE OF FEDERAL REGULATIONS (CFR)

19 CFR 24.24	Harbor Maintenance Fee
33 CFR 156	Oil and Hazardous Material Transfer Operations

##### ENGINEERING MANUALS (EM)

EM 385-1-1	(1996) U.S. Army Corps of Engineers Safety and Health Requirements Manual
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##### 1.2 RIGHTS-OF-WAY

a. The rights-of-way for the work to be constructed under this contract, within the limits indicated on the drawings, will be provided by the Government without cost to the Contractor. If these rights-of-way are used by the Contractor, he shall, at his own expense, do all work necessary to make such rights-of-way suitable for traveling to and from the worksite. Upon completion of the Contractor's work, any such rights-of-way furnished by the Government shall be left in a condition satisfactory to the Contracting Officer.

b. When so directed by the Contracting Officer, the Contractor shall, without expense to the Government and at any time during the progress of the work when it is not being actively used for contract operations, promptly vacate and clean up any part of the Government grounds or rights-of-way that have been allotted to or have been in use by the Contractor.

c. The Contractor shall not obstruct any existing roads on lands controlled by the United States except with written permission of the Contracting Officer and shall maintain such roads in as good condition as exists at the time of commencement of work under this contract.

d. The Contractor shall procure, without expense to the Government, all additional lands, access roads, or rights-of-way necessary for his use in the performance of the work or as required by his method of operation. The Contractor shall submit written evidence to the Contracting Officer that he has obtained the rights-of-way from the property owners. The written evidence shall consist of an authenticated copy of the conveyance under which the Contractor acquired such rights-of-way, prepared and executed in accordance with the laws of the State in which the land is located. The Contractor

shall also obtain from the owners a release for the Government for any damages which may result from his use of such rights-of-way. The written conveyance and release shall be provided to the Government prior to use of Contractor obtained additional lands, access roads, or rights-of-way. If temporary rights-of-way are obtained by the Contractor the period of time for those rights shall coincide with Section 00800 SPECIAL CONTRACT REQUIREMENTS paragraph COMMENCEMENT, PROSECUTION AND COMPLETION OF WORK, plus a reasonable time for any extension granted for the completion of the work. Any agreements or permits with levee boards, counties, parishes, municipalities, or other political subdivisions for moving material and equipment will be the responsibility of the Contractor and will be obtained at no expense to the Government. Any delays to the Contractor resulting from delays in procuring such additional lands, access roads, rights-of-way, or permits for moving material and equipment for his work under this contract will not be a basis for any claim for increase in the cost of this contract. The Contractor shall make his own investigations to determine the conditions, restrictions and difficulties which may be encountered in acquiring such In addition, the Contractor shall be solely liable for any and all damages and claims of any nature whatsoever arising from or growing out of the acquisition and use of rights-of-way, etc. other than those furnished by the Government.

e. Notwithstanding any language or drawings to the contrary in this contract, the United States will not provide access or rights-of-way over any public lands and will not be responsible for acquiring such.

f. The Contractor shall repair at no expense to the Government, any and all damage to any existing roads when such damage is a result of his operations under this contract. (CEMVK-OC, 1989)

### 1.3 PRECONSTRUCTION CONFERENCE

a. A preconstruction conference will be arranged by the Area Engineer as soon after contract award as possible, and the conference will be conducted before work is allowed to commence. The Area Engineer will notify the Contractor of the time, date, and location for the meeting. At this conference, the Contractor will be oriented with respect to contract administration procedures, lines of authority, and construction matters. All known subcontractors performing at least 20 percent of the contract are required to attend this conference. Additional conferences may be established by the Area Engineer for any major subcontractors unknown at the time of the initial conference.

b. Submission by the Contractor of the items listed below will determine the date of the conference. The following items shall be submitted to the Area Engineer for review at least seven (7) calendar days prior to the preconstruction conference:

- (1) Safety Plan
- (2) Environmental Protection Plan
- (3) Quality Control Plan

c. The Contractor shall bring to this conference, in completed form the following:

- (1) Letter of superintendent appointment and authority

(2) List of subcontractors

d. The Contractor should bring to this conference, or at least be prepared to discuss, the following:

(1) Submittal register

(2) Progress chart or Network Analysis System (as applicable)

e. Minutes of this conference will be taken and prepared by the Area Engineer and sent to the Contractor for his concurrence and signature.

1.4 SUBMITTAL OF SUBCONTRACTING PLAN

a. This paragraph does not apply to small business concerns.

b. After bid opening, and within 7 days, the apparent low bidder, upon telephone notification by the Small and Disadvantaged Business Utilization Specialist, shall submit a Small and Disadvantaged Business Subcontracting Plan. The plan shall be submitted in accordance with Contract Clauses UTILIZATION OF SMALL BUSINESS CONCERNS AND SMALL DISADVANTAGED BUSINESS CONCERNS and SMALL BUSINESS AND SMALL DISADVANTAGED BUSINESS SUBCONTRACTING PLAN, ALTERNATE 1, and the person responsible for administering the plan shall be named in paragraph AGENT FOR SUBMITTING SMALL BUSINESS AND BUSINESS AND SMALL DISADVANTAGED BUSINESS SUBCONTRACTING PLAN of the Representations and Certifications.

1.5 NOTIFICATION OF AREA ENGINEER BEFORE BEGINNING WORK

At least 7 days before beginning work, the Contractor shall notify Mr. Gerald R. McDonald, Vidalia Area Engineer, P.O. Box 910, Vidalia, Louisiana 71373-0910, Telephone (318) 336-5226

1.6 ORDER OF WORK

Work on each structure or portion thereof shall begin at the upstream or landward end and continue progressively downstream or riverward unless otherwise directed in writing by the Contracting Officer. Work will not be permitted at river stages higher than 123 feet, N.G.V.D. without written permission of the Contracting Officer. Work shall normally be conducted during daylight hours. Work will not be conducted during hours of darkness without prior written approval of the Contracting Officer. Work shall be carried out under the following order unless otherwise specified or directed in writing by the Contracting Officer:

First Order Work: Begin work on Dike 239.4-R and continue working progressively from start to finish on each dike as they are encountered. Work on each dike may proceed concurrently with work on the adjacent upstream dike.

Second Order Work: Revetment Reinforcement, place 7 tons per linear foot of stone within the limits as shown on Drawing No. 2 and as directed by the Contracting Officer's Representative.

Third Order Work: Revetment Reinforcement Upperbank, Stone shall be placed in upper bank failures as directed by the Contracting Officer's Representative at time of construction.

Note: Contractor shall notify Mr. Larry Bundrick at (318) 797-4366 or at Route 1 Box 342, Shreveport, Louisiana 71115, prior to beginning construction concerning access to his property.

#### 1.7 WORK SCHEDULE DIAGRAM AND PROGRESS CHART

The Contractor shall furnish a Work Schedule Diagram or a periodically updated Progress Chart. The Contractor shall determine which format will be used and submit to the Contracting Officer as described below.

##### a. Work Schedule Diagram

(1) The progress chart required by provisions of paragraph (a) of the Contract Clause SCHEDULE FOR CONSTRUCTION CONTRACTS, shall be prepared in the form of a Work Schedule Diagram. FIVE (5) COPIES OF THE WORK SCHEDULE DIAGRAM WILL BE REQUIRED. The use of a computer is at the Contractor's option.

(2) The Work Schedule Diagram shall be in either the I-J or Precedent Diagramming method. The diagram shall show the order and interdependence of activities and the sequence in which the work is to be accomplished. The diagram shall include, in addition to construction activities, the submittal and approval of materials, samples and shop drawings, the procurement of all materials and equipment, and preparatory and initial quality control inspections. All activities of the Government that affect progress and contract required dates for completion of all or part of the work shall be shown. No activity with a duration of more than thirty (30) calendar days will be allowed. The diagram shall be drafted to show a continuous flow from left to right with no flow from right to left. The following information shall be shown on the diagram for each activity: preceding and following event numbers, description, estimated cost, and duration of calendar days. Numbering shall be assigned so that preceding event numbers are smaller numerically than the following event numbers. Skip-numbering should be used on the network to allow addition of subsequent activities for change order and logic changes. The submittal of the diagram shall include a listing of standard abbreviations used by the Contractor.

(3) The diagram shall be submitted in time to be received by the Government two (2) days prior to the scheduled Preconstruction Conference. The diagram will be used to determine Contractor's progress on the project. The Contractor shall at least monthly or with each pay estimate submit actual progress and remaining duration on each activity, which will be agreed to by the Contracting Officer. If there are no changes on the diagram logic, the Contractor may submit these updates in a narrative form. If any changes are made to the diagram logic, the Contractor shall submit a revised work schedule diagram along with a narrative explaining those logic changes. Five (5) copies of any revised diagrams will be required.

b. Progress Chart - The progress chart required by provisions of paragraph (a) of the Contract Clause SCHEDULE FOR CONSTRUCTION CONTRACTS shall be prepared on ENG FORM 2454, copies of which will be furnished to the Contractor by the Government. SIX (6) COPIES OF THE SCHEDULE WILL BE REQUIRED. The Progress Chart shall be periodically

updated. The updates shall be as directed by the Contracting Officer and as stated in paragraph "(a)(3)" above.

#### 1.8 DESIGNATED BILLING OFFICE

The designated billing office for this contract shall be Vidalia Area Office, P.O. Box 910, Vidalia, Louisiana 71373-0190.

#### 1.9 PAYMENT INVOICES

(a) The Federal Acquisition Regulation requires that the "REMIT TO" address on the invoice match the "REMIT TO" address on the contract or a proper notice of assignment. The Payment Office will verify a match of the "REMIT TO" address in the contract and contractor's invoice prior to payment. If the addresses do not match, the invoice will be determined improper and returned to the contractor for correction and resubmission. If an invoice is improperly returned, the original invoice receipt date shall be used as the basis for determining interest to be paid in accordance with the PROMPT PAYMENT ACT.

(b) Among other things, the Contract Clause PROMPT PAYMENT FOR CONSTRUCTION CONTRACTS requires that a proper invoice for payment include substantiation of the amounts requested. As required in Office of Management and Budget, Circular A-125 (Rev.), PROMPT PAYMENT, dated December 12, 1989, substantiation of the amount requested for progress payments under construction contracts includes the following:

- (1) An itemization of the amounts requested related to the various elements of work required by the contract covered by the payment request;
- (2) A listing of the amount included for work performed by each subcontractor under the contract;
- (3) A listing of the total amount of each subcontract under the contract;
- (4) A listing of the amounts previously paid to each such subcontractor under the contract; and,
- (5) Additional supporting data in a form and detail required by the contracting officer.

(c) Failure to include the above information in a contractor's invoice will result in the invoice being considered defective under the provisions of the PROMPT PAYMENT FOR CONSTRUCTION CONTRACTS clause of the contract, and it will be returned to the contractor for correction and resubmission. (CEMVK-OC, 1997)

#### 1.10 TEMPORARY PROJECT FENCING

Temporary project fencing as required by Section 4, "Temporary Facilities", paragraph 04.A.04 of EM 385-1-1, "Safety and Health Requirements Manual", dated 3 September 1996, is not required on this project.

#### 1.11 LOCAL LABOR PREFERENCE

a. The Contractor and his subcontractors shall, in carrying out the work under this contract, give preference to qualified persons who



regularly reside in the area where the project is situated, except:

(1) To the extent that qualified persons regularly residing in the area are not available.

(2) For the reasonable needs of the Contractor or his subcontractors to employ supervisory or specially experienced individuals necessary to assure execution of the contract.

(3) For the obligation of the Contractor of his subcontractors to offer employment to present or former employees as the result of a lawful collective bargaining contract, provided that in no event shall the number of non-resident persons employed under this subparagraph (3) exceed 20 percent of the total number of employees employed by such Contractor and his subcontractors on such project.

b. A person who regularly resides in the area means an individual must reside in the area, without limit to time, but cannot either have been hired outside the area or have been moved to the area at the Contractor's expense.

c. The area means the following parishes or counties: Avoyelles, Bienville, Bossier, Caddo, Catahoula, Concordia, DeSoto, Evangeline, Grant, LaSalle, Natchitoches, Pointe Coupee, Rapides, Red River, Sabine, St. Landry, Vernon, Webster, and Winn Parishes of Louisiana; Columbia, Lafayette, and Miller Counties of Arkansas; Bowie, Cass, Harrison, and Marion Counties of Texas.

d. The contractor and his subcontractors shall furnish the United States Employment Service Office in the area in which the project is located with a list of all positions for which they may from time to time require laborers, mechanics, and other employees.

e. The Contractor shall furnish and be responsible for his subcontractors furnishing to the Contracting Officer calendar year quarterly reports by the 10th of the month following the end of each calendar quarter year. Reports shall be in such form as the Contracting Officer may prescribe and shall show the total number of employees and the number of employees who regularly reside within the area. If the number of non-resident employees of the Contractor or any subcontractor exceeds 20 percent of his total employees, the report shall also include a statement of actions taken to achieve compliance with this clause.

#### 1.12 AS BUILT DRAWINGS

This supplements the Contract Clause SPECIFICATIONS AND DRAWINGS FOR CONSTRUCTION.

a. As-Built Contract Drawings. The Contractor shall maintain two (2) full-size sets of blue-line prints of the contract drawings depicting in red a record of as-built conditions. These drawings shall be maintained in current condition at all times during the entire contract period. The drawings shall be updated daily by the Contractor showing all changes from the contract plans which are made in the work, additional information which might be uncovered in the course of construction, and information for future construction reference (such as debris disposed by burying). This information shall be recorded on the prints accurately and neatly by means of details and notes. Each

month, prior to submitting a request for progress payment, the Contractor shall review the as-built drawings with the Contracting Officer, and the Contractor shall certify that the as-built drawings are accurate and up-to-date before progress payment is made. The Contractor shall deliver to the Contracting Officer two (2) complete sets of the as-built marked prints at the time of the final inspection of the project. The as-built drawings shall be identified by entering the words "AS-BUILT DRAWINGS" in letters at least 3/16" high, placed below each title block.

#### 1.13 PROJECT SIGN (APR 1991)

The Contractor shall fabricate, erect and maintain one sign for project identification. The sign shall be displayed and positioned for reading by passing viewers. The exact location is subject to Contracting Officer's approval. Information for the right side of the project sign shall be as follows:

Title: East Point Dikes  
Project: Red River Waterway  
Contract No: DACW38-99-  
Contractor: (Contractor's name and city)

The project identification sign shall meet the requirements specified in the U.S. Army Corps of Engineers Sign (USACES) Standards Manual, EP 310-1-6a and EP 310-1-6b. The Contractor can purchase the USACES standards manual from:

Corps of Engineers Publications Department  
2803 52nd Avenue  
Hyattsville, Maryland 20781

The publications department may be reached at telephone number (301) 436-2065. The price of the manual is \$65.00 which may change without notice.

A copy of the sign standards manual is available for review at the office of the Vicksburg District Sign Program Manager and questions concerning manufacture and installation of the project identification sign may be addressed to:

Vicksburg District Sign Program Manager (Lawran Richter)  
ATTN: CEMVK-OD-MN  
4155 Clay Street  
Vicksburg, MS 39183-3435  
Telephone: (601) 631-5287

#### 1.14 MINIMUM REQUIRED INSURANCE

The following paragraph is applicable if the services involved are performed on a Government Installation. Government Installation is defined as property where the Government holds by fee simple title, by construction rights-of-way, or perpetual easement, etc., an interest in real property. See Contract Clause INSURANCE-WORK ON A GOVERNMENT INSTALLATION.

a. Workmen's Compensation and Employer's Liability Insurance. The Contractor shall comply with all applicable workmen's compensation Statutes of the State of Louisiana and shall furnish evidence of Employer's Liability Insurance in an amount of not less than \$100,000.

b. General Liability Insurance. Bodily injury liability insurance in the minimum limits of \$500,000 per occurrence on the comprehensive form of policy.

c. Automobile Liability Insurance. Minimum limits of \$200,000 per person and \$500,000 per occurrence for bodily injury and \$20,000 per occurrence for property damage. This insurance shall be on the comprehensive form of policy and shall cover the operation of all automobiles used in performance of the contract.

d. Marine Insurance. Hull policy must be endorsed for towers liability (tow and cargo) and the amount of the policy must be supplemented by excess towers' liability in the minimum amount of \$1,000,000, and also by excess protection and indemnity insurance in an amount not less than \$1,000,000. All policies must be endorsed for navigation limits applicable to this contract. The United States Corps of Engineers, Vicksburg District, must be named as an additional insured on all policies, and the policies shall contain an endorsement waiving subrogation against the United States. In the event of material changes in coverage or of cancellation of any policy, written notice shall be given to the Contracting Officer at least 30 days prior to the effective date of such change or cancellation.

#### 1.15 WORK IN QUARANTINED AREA

The work called for by this contract involves activities in parishes quarantined by the Department of Agriculture to prevent the spread of certain plant pests which may be present in the soil. The Contractor agrees that all construction equipment and tools to be moved from such parishes shall be thoroughly cleaned of all soil residues at the construction site with water under pressure and that hand tools shall be thoroughly cleaned by brushing or other means to remove all soil. In addition, if this contract involves the identification, shipping, storage, testing, or disposal of soils from such quarantined area, the Contractor agrees to comply with the provisions of ER 1110-1-5, "Plant Pest Quarantined Areas and Foreign Soil Samples" attachments, a copy of which will be made available by the Contracting Officer upon request. The Contractor agrees to assure compliance with this obligation by all subcontractors.

#### 1.16 CERTIFICATES OF COMPLIANCE

Any certificates required for demonstrating proof of compliance of material with specification requirement shall be executed in four (4) copies. Each certificate shall be signed by an official authorized to certify on behalf of the manufacturing company and shall contain the name and address of the Contractor, the project name and location, and the quantity and date or dates of shipment or delivery to which the certificates apply. Copies of laboratory test reports submitted with certificates shall contain the name and address of the testing laboratory and the date or dates of the tests to which the report applies. Certification shall not be construed as relieving the Contractor from furnishing satisfactory material, if, after tests are performed on selected samples, the material is found not to meet the specific requirements.

#### 1.17 SAFETY

This contract is subject to the requirements of EM 385-1-1, "U.S. Army Corps of Engineers Safety and Health Requirements Manual", dated 3 September 1996. No separate payment will be made for compliance with the requirements thereof.

#### 1.18 SAFETY SIGN

The Contractor shall fabricate, erect and maintain a safety sign at the site, as located by the Contracting Officer. The sign shall be erected as soon as practicable, but not later than 15 calendar days after the date established for commencement of work. The data required shall be current. The safety sign shall meet the requirements specified in the U.S. Army Corps of Engineers Sign (USACES) Standards Manual, EP 310-1-6a and EP 310-1-6b. The Contractor can purchase the USACES standards manual from:

Corps of Engineers Publications Department  
2803 52nd Avenue  
Hyattsville, Maryland 20781

The publications department may be reached at telephone number (301) 436-2065. The price of the manual is \$65.00 which may change without notice.

A copy of the sign standards manual is available for review at the office of the Vicksburg District Sign Program Manager and questions concerning manufacture and installation of the safety sign may be addressed to:

Vicksburg District Sign Program Manager (Lawran Richter)  
ATTN: CEMVK-OD-MN  
4155 Clay Street  
Vicksburg, MS 39183-3435  
Telephone: (601) 631-5287

#### 1.19 ACCIDENT PREVENTION PLAN

Refer to Contract Clause ACCIDENT PREVENTION (Alternate I). Within 15 days after receipt of award of the contract, an Accident Prevention Plan shall be submitted to the Contracting Officer for review and acceptance. The plan shall be prepared in the following format:

- a. An executed LMV FORM 358-R, "Administrative Plan" (available upon request), see Appendix A, "Minimum Basic Outline for Accident Prevention Plan" of EM 385-1-1.
- b. An executed LMV FORM 359-R, "Activity Hazard Analysis" (available upon request), see paragraph 01.A.09 and figure 1-1 of EM 385-1-1.
- c. A copy of company policy statement regarding accident prevention.
- d. When marine plant and equipment are in use under a contract, the method of fuel oil transfer shall be submitted on LMV Form 414R Fuel Oil Transfer, (available upon request). (Refer to 33 CFR 156.)
- e. The Contractor shall not commence physical work at the site until the plan has been accepted by the Contracting Officer, or his authorized representative. At the Contracting Officer's discretion,

the Contractor may submit his Activity Hazard Analysis only for the first phase of construction provided that it is accompanied by an outline of the remaining phases of construction. All remaining phases shall be submitted and accepted prior to the beginning of work in each phase. Also, refer to Section 1, "Program Management", paragraph 01.B, "Indoctrination and Training" of EM 385-1-1.

#### 1.20 DAILY INSPECTIONS

Refer to Contract Clause INSPECTION OF CONSTRUCTION. The Contractor shall perform daily safety inspections and record them on the forms approved by the Contracting Officer. Reports of daily inspections shall be maintained at the job site. The reports shall be records of the daily inspections and resulting actions. As a minimum each report shall include the following:

- a. Phase(s) of construction underway during the inspection
- b. Locations or areas inspections were made.
- c. Results of inspection, including nature of deficiencies observed and corrective actions taken, or to be taken, date, and signature of the person responsible for its contents.

#### 1.21 ACCIDENT INVESTIGATIONS AND REPORTING

Refer to EM 385-1-1, Section 1, "Program Management", paragraph 01.D, "Accident Reporting and Recordkeeping". Accidents shall be investigated and reports completed by the immediate supervisor of the employee(s) involved and reported in writing to the Contracting Officer or his representative within one working day after the accident occurs.

#### 1.22 ACCOMMODATIONS FOR GOVERNMENT REPRESENTATIVES

- a. Accommodations. The Contractor shall furnish and maintain a temporary building for the exclusive use of the Government Representatives and shall move the building from the vicinity of one part of the work to another as the work progresses. The building shall be of light, but weatherproof construction, approximately 120 square feet in size with not less than 7 feet of headroom. It shall have a substantial workbench along one side and sufficient number of windows to admit ample working light. Windows shall be arranged to open and to be securely fastened from the inside. The door shall be of wood panel or solid core construction and be equipped with a padlock and heavy duty hasp bolted to the door. Insect screens shall be provided for windows. Glass panels in windows shall be equipped with bars or heavy mesh screens which will prevent easy access to the building through these panels. The Contractor shall heat the building by means of heaters and shall cool the building by means of an air conditioning unit. Electric current shall also be provided for operation of lights, appliances, and electric calculators at 115 volts AC. Electric current may be provided by use of a portable generator. A minimum of two wall outlets and two ceiling drops shall be provided in the building. One office desk and a minimum of two chairs shall be provided in the building. Telephone service with an exclusive line solely for Government use shall be furnished to the Government Representative building. Toilet facilities shall be provided in the building or adjacent thereto. The building shall remain the property of the Contractor and upon completion of all work under the contract shall be removed as provided in the Contract Clause OPERATIONS AND STORAGE

AREAS. An office trailer meeting the above requirements will be acceptable.

b. Janitor Services. The Contractor shall furnish daily janitorial services for the above offices and perform any required maintenance of subject facility and adjacent grounds during the entire life of the contract. Toilet facilities shall be clean and sanitary at all times. Services shall be performed at such a time and in such a manner to least interfere with the operations but will be accomplished only when the facility is in daily use. The Contractor shall also provide daily trash collection and cleanup of the building and adjacent outside areas, and shall dispose of all discarded debris in a manner approved.

c. Should the Contractor refuse, neglect, or delay compliance with the above requirements, the specific facilities may be furnished and maintained by the Contracting Officer, and the cost thereof will be deducted from any amount due or to become due the Contractor.

#### 1.23 MACHINERY AND MECHANIZED EQUIPMENT

Machinery and mechanized equipment used under this contract shall comply with the following:

a. When a rubber-tired front-end loader, bulldozer, etc., is operated on floating plant, either a bumper or curb with a minimum height of one-third of the outside diameter of the largest tire on the equipment, a barge tied alongside, or other means acceptable to the Contracting Officer shall be used to prevent equipment from moving or falling into the water.

b. The stability of crawler, truck, and wheel-mounted cranes shall be assured.

(1) The manufacturer's load-rating chart may be used to determine the maximum allowable working load for each particular crane's boom angle provided a test load, with a boom angle of 20 degrees, confirms the manufacturer's load-rating table.

(2) Stability tests are required if:

(i) there is no manufacturer's load-rating chart securely fixed to the operator's cab;

(ii) there has been a change in boom or other structural member or,

(iii) there has been a change in the counterweight. The test shall consist of lifting a load with the boom in the least stable undercarriage position and at an angle of 20 degrees above the horizontal. The test shall be conducted under close supervision on a firm, level surface. The load that tilts the machine shall be identified as the test load. The test load moment (in ft-lbs) shall then be calculated by multiplying the horizontal distance (in ft) from the center of rotation of the machine to the test load, times the test load (in lbs). Three-fourths of this test-load moment shall then be used to compute the maximum allowable operating loads for the boom at 20, 40, 60, and 80 degrees above horizontal. From these maximum allowable operating loads, curve shall be plotted and posted in the cab of the machine in sight of the operator. These values shall not be exceeded except in the

performance test described below. The test load shall never exceed 100 percent of the manufacturer's maximum rated capacity.

(3) In lieu of the test and computations above, the crane may be load tested for stability at each of the four boom positions listed above.

c. Performance tests shall be performed in accordance with Section 16, "Machinery and Mechanized Equipment" of EM 385-1-1, "Safety and Health Requirements Manual", except as specified below. Performance tests shall be conducted after each stability test, when the crane is placed in service on a project, and at least every 12 months.

(1) When conducting a performance load test which is required of a new crane or a crane in which load sustaining parts have been altered, replaced, or repaired (excluding replacement of the rope), the test load shall be as specified in ASME/ANSI B30 series. That is, for overhead, gantry, portal, pillar, tower, monorail, and underhung cranes, the test load shall not exceed 125 percent of the manufacturer's load rating capacity chart at the configuration of the test; for hammerhead tower, mobile, and floating cranes and boom trucks, the test load shall not exceed 110 percent of the manufacturer's load rating capacity chart at the configuration of the test.

(2) When conducting a performance load test which is required because a crane is reconfigured, or reassembled after disassembly, or because the crane requires an annual load test, the test loads shall not exceed 100 percent of the manufacturer's load rating capacity chart at the configuration of the test.

(3) All load tests are required to be conducted in accordance with the manufacturer's recommendations.

d. Inspections shall be made which will ensure a safe and economical operation of both cranes and draglines with inspection documented. Copies of the inspections and tests shall be available at the job site for review. All stability and performance tests on cranes and all complete dragline inspections shall be witnessed by the Contracting Officer or his authorized representative.

e. A complete dragline inspection shall be made:

(1) at least annually;

(2) prior to the dragline being placed in operation; and

(3) after the dragline has been out of service for more than 6 months.

f. All heavy equipment moved onto the worksite shall be inspected using the appropriate LMV Inspection Forms (attached at the end of this Section). All completed forms, including abatement schedule of any violations, shall be maintained at the job site for continued review and update as needed.

#### 1.24 VEHICLE WEIGHT LIMITATIONS

Vehicle weight limitations for operation on rural roads and bridges may

affect the prosecution of work in this contract. The Contractor will be responsible for obtaining all necessary licenses and permits in accordance with the Contract Clause PERMITS AND RESPONSIBILITIES. Current information regarding road and bridge weight limits may be obtained by contacting the Louisiana Department of Transportation and Development and the police jury for the parishes through which equipment and materials will be transported as a result of this contract.

1.25 PUBLIC UTILITIES (1965 APR OCE)

a. Unless otherwise specified, shown on the drawings, or stated in writing by the Contracting Officer, the Contractor shall not remove or disturb any public utilities. Such removals, alterations, and relocations, where necessary, will be made by others. The locations, if any, shown on the drawings for underground utilities are approximate only. The exact locations of such utilities shall be determined by the Contractor in the field prior to commencing construction operations in their vicinity.

b. The attention of the Contractor is directed to the possibility that he may encounter, within the right-of-way limits, public utilities, some of which may be buried, and the existence of which is presently not known. Should any such utilities be encountered, the Contractor shall immediately notify the Contracting Officer so that he may determine whether they shall be removed, relocated, or altered. After such determination is made, the Contractor shall, if so directed by the Contracting Officer, remove, relocate, or alter them as required, and an equitable adjustment will be made in accordance with the Contract Clause CHANGES. In event the Contracting Officer arranges for such removals, alterations, or relocations to be performed by others, the Contractor shall cooperate with such others during the latter's removal, alteration, or relocation operations in accordance with the Contract Clause OTHER CONTRACTS.

1.26 DAMAGE TO WORK

(a) The responsibility for damage to any part of the permanent work shall be as set forth in the Contract Clause PERMITS AND RESPONSIBILITIES. However, if, in the judgement of the Contracting Officer, any part of the permanent work performed by the Contractor is damaged by flood (see Section 00800 SPECIAL CONTRACT REQUIREMENTS paragraph PHYSICAL DATA, subparagraph FLOODS) or earthquake, which damage is not due to the failure of the Contractor to take reasonable precautions or to exercise sound engineering and construction practices in the conduct of the work, the Contractor shall make repairs as ordered by the Contracting Officer and full compensation for such repairs to permanent work will be made at the applicable contract unit or lump sum prices as fixed and established in the contract. If, in the opinion of the Contracting Officer, for any part of such damaged permanent work, there is no applicable contract unit or lump sum price, then an equitable adjustment pursuant to the Contract Clause CHANGES will be made as full compensation for the repairs for that part of the permanent work for which there is no applicable contract unit or lump sum price.

(b) Except as herein provided, damage to all work (including temporary construction), utilities, materials, equipment, and plant shall be repaired to the satisfaction of the Contracting Officer, at the Contractor's expense, regardless of the cause of such damage.



1.27 ENERGY CONSERVATION

The Contractor shall ensure that construction operations are conducted efficiently and with the minimum use of energy.

1.28 TIME EXTENSIONS FOR UNUSUALLY SEVERE WEATHER

a. This provision specifies the procedure for determination of time extensions for unusually severe weather in accordance with Contract Clause DEFAULT (FIXED PRICE CONSTRUCTION). In order for the Contracting Officer to award a time extension under this clause, the following conditions must be satisfied:

(1) The weather experienced at the project site during the contract period must be found to be unusually severe, that is, more severe than the adverse weather anticipated for the project location during any given month.

(2) The unusually severe weather must actually cause a delay to the completion of the project. The delay must be beyond the control and without the fault or negligence of the contractor.

b. The following schedule of monthly anticipated adverse weather delays is based on National Oceanic and Atmospheric Administration (NOAA) or similar data for the project location and will constitute the base line for monthly weather time evaluations. The contractor's progress schedule must reflect these anticipated adverse weather delays in all weather dependent activities.

MONTHLY ANTICIPATED ADVERSE WEATHER DELAY  
WORK DAYS BASED ON FIVE (5) DAY WORK WEEK

JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC

(5) (4) (5) (4) (6) (4) (4) (3) (3) (3) (4) (5)

c. Upon acknowledgement of the Notice to Proceed (NTP) and continuing throughout the contract, the Contractor shall record on the daily CQC report, the occurrence of adverse weather and resultant impact to normally scheduled work. Actual adverse weather delay days must prevent work on critical activities for 50 percent or more of the contractor's scheduled work day. The number of actual adverse weather days shall include days impacted by actual adverse weather (even if adverse weather occurred in previous month), be calculated chronologically from the first to the last day of each month, and be recorded as full days. If the number of actual adverse weather delay days exceeds the number of days anticipated in paragraph b, above, the contracting officer will convert any qualifying delays to calendar days, giving full consideration for equivalent fair weather work days, and issue a modification in accordance with Contract Clause DEFAULT (FIXED PRICE CONSTRUCTION).

1.29 SUNDAYS, HOLIDAYS, AND NIGHTS

When the Contractor elects to work on Sundays, holidays, and nights, notice of his intention to do so shall be given to the Contracting Officer, in writing, sufficiently in advance of commencement of such operations to

permit suitable arrangements for inspection to be made. Adequate lighting for thorough inspection of night operations shall be provided by the Contractor at his own expense. (See paragraph ORDER OF WORK for provisions for work at night.)

#### 1.30 CONTROL OF ACCESS TO CONSTRUCTION AREAS

a. This paragraph supplements the Contract Clauses PERMITS AND RESPONSIBILITIES and OPERATIONS AND STORAGE AREAS.

b. It shall be the responsibility of the Contractor to prevent possible injury to visitors to the project site. Only personnel engaged in contract work and others authorized by the Contracting Officer shall be permitted to enter into the construction areas. Suitable barriers, warning signs and directives shall be placed by the Contractor to direct persons not engaged in the work away from the areas of danger. The Contractor shall be responsible for effective enforcement of this clause during the period of this contract.

#### 1.31 NOT USED

#### 1.32 HARBOR MAINTENANCE FEE

a. Offerors or bidders contemplating use of U.S. ports in the performance of contract are subject to paying a harbor maintenance fee on cargo. Federal law establishes an ad valorem port use fee on commercial cargo imported into or exported from various U.S. ports. The fee is 0.125 percent (0.00125). Cargo to be used in performing work under contracts with the U.S. Government is not exempt from the fee, although certain exemptions do exist. Offerors are responsible for ensuring that the applicable fee and associated costs are taken into consideration in the preparation of their offers. Failure to pay the harbor maintenance fee may result in assessment of penalties by the Customs Service.

b. The statute is at Title 26 U.S. Code section 4461 and 4462, Department of Treasury Customs Service regulations implementing the statute, including a list of ports subject to the fee, are found at 19 CFR 24.24, Harbor Maintenance Fee. Additional information may be obtained from local U.S. Customs Service Offices or by writing to the Director, Budget Division, Office of Finance, Room 6328, U.S. Customs Service, 1301 Constitution Avenue, N.W., Washington, D.C. 20229.

#### 1.33 MEANS OF ESCAPE FOR PERSONNEL QUARTERED OR WORKING ON FLOATING PLANT

Two means of escape shall be provided for assembly, sleeping, and messing areas on floating plants. For areas involving 10 or more persons, both means of egress shall be through standard size doors opening to different exit routes. Where nine or fewer persons are involved, one of the means of escape may be a window (minimum dimensions 24 inches by 36 inches) which leads to a different exit route. Refer to Section 19, "Floating Plant and Marine Activities" of EM 385-1-1, "Safety and Health Requirements Manual".

#### 1.34 EMERGENCY ALARMS AND SIGNALS

a. Alarms. Emergency alarms shall be installed and maintained on all floating plant requiring a crew where it is possible for either a passenger or crewman to be out of sight or hearing from any other person. The alarm system shall be operated from the primary electrical

system with standby batteries on trickle charge that will automatically furnish the required energy during an electrical-system failure. A sufficient number of signaling devices shall be placed on each deck so that the sound can be heard distinctly at any point above the usual background noise. All signaling devices shall be so interconnected that actuation can occur from at least one strategic point on each deck.

b. Signals.

(1) Fire Alarm Signals. The general fire alarm signal shall be in accordance with Paragraph 97.13-15b of the "Coast Guard Rules and Regulations for Cargo and Miscellaneous Vessels", Sub-Chapter 1, 1 Sep 77 (CG 257).

(2) Abandon Ship Signals. The signal for abandon ship shall be in accordance with Paragraph 97.13-15c of reference cited in paragraph "b(1)" above.

(3) Man-Overboard Signal. Hail and pass the word to the bridge. All personnel and vessels capable of rendering assistance shall respond.

1.35 SIGNAL LIGHTS (JAN 1965)

The Contractor shall display signal lights and conduct his operations in accordance with the regulations of the Department of the Army and of the Coast Guard covering lights and day signals to be displayed, by towing vessels with tows on which no signals can be displayed, vessels working on wrecks, dredges, and vessels engaged in laying cables or pipe or in submarine or bank protection operation; lights to be displayed on dredge pipelines, and day signals to be displayed by vessels of more than 65 feet in length moored or anchored in a fairway or channel, and the passing by other vessels of floating plant working in navigable waters see for example, 33 CFR 84 through 89. (See also Contract Clause, PERMITS AND RESPONSIBILITIES.)

1.36 INSPECTION

a. The inspectors will direct the maintenance of the gauges, ranges, location marks, and limit marks in proper order and position; but the presence of the inspector will not relieve the Contractor of responsibility for the proper execution of the work in accordance with the specifications. The Contractor will be required:

(1) To furnish, on the request of the Contracting Officer or any inspector, the use of such boats, boatmen, laborers, and material forming a part of the ordinary and usual equipment and crew of the plant as may be reasonably necessary in inspecting and supervising the work. However, the Contractor will not be required to furnish such facilities for the surveys prescribed in the paragraph FINAL EXAMINATION AND ACCEPTANCE.

(2) To furnish, on the request of the Contracting Officer or any inspector, suitable transportation, from all points on shore designated by the Contracting Officer, to and from the various pieces of plant.

b. Should the Contractor refuse, neglect, or delay compliance with these requirements, the specific facilities may be furnished and

maintained by the Contracting Officer, and the cost thereof will be deducted from any amount due or to become due the Contractor.

#### 1.37 ACCEPTANCE

Each completed dike may be accepted as a whole, and revetment reinforcement may be accepted as a whole. If stream and current conditions are such that in the opinion of the Contracting Officer, completion of work to be prescribed grade and/or section become impracticable and it is determined to be in the best interest of the Government, it may be accepted even though it has not been completed to the prescribed grade and/or section.

#### 1.38 PROTECTION OF EXISTING STABILIZATION WORK

The Contractor shall take such measures as necessary to prevent damage to existing revetments and dikes from any part of his plant. Any damage to stabilization work caused by the Contractor's equipment shall be repaired or restored promptly by and at the expense of the Contractor.

#### 1.39 TERMINOLOGY

##### a. General

This paragraph explains certain terminology which is common to construction of bank stabilization work on the Red River and which may not be self explanatory in the subsequent applicable provisions of the technical specifications and on the drawings.

##### b. Revetments

The term "revetment" applies to various types of stabilization structures that are constructed along the river approximately parallel to the current, The revetments are constructed of stone or piling.

##### c. Dikes

The term "dike" applies to the types of stabilization structures that are constructed along the river at an angle to the current. The dikes are constructed of stone or piling.

##### d. Standard Drawings

Details of various types of structures in general use on the Red River are shown on standard drawings forming a part of these specifications

#### 1.40 CONSTRUCTION SURVEYS

The Contractor shall perform the following construction surveys. Separate payment will not be made for these surveys and all costs associated therewith shall be included in the applicable unit prices or lump-sum prices contained in the Bidding Schedule.

##### a. Dike and Revetment Reinforcement Construction

1. Survey cross sections not to exceed 100 feet intervals shall be taken to cover the area of the reinforcement construction. Copies of the field notes, plotted cross sections, and quantity computations shall be furnished at least 500 feet ahead of the initial placement of stone. Cross-sections taken more than 14

calendar days ahead of construction shall not be acceptable.

2. Survey cross sections shall be taken of the completed stone placement. Copies of the field notes, plotted cross-sections, and quantity computations shall be furnished within 5 days of the completion of each 500 feet increment of the work.

3. The sections shall be plotted on 10 X 10 cross-section tracing paper to a scale of 1-inch = 20 feet. The cross-section will be plotted in roll form, with the first section at the bottom of the sheet, and proceeding by increasing stations to the top of the sheet. The right and left sides of the cross-section shall conform with the direction of the increasing stations. Horizontal distance will be shown on the top margin in distances of 100 feet, and NGVD datum shown on the appropriate horizontal lines. The cross-sections will be identified by station number under each section. Original ground surface will be represented by a solid line, the net section by a short dash line, the gross section by a long dash line, and the final section by a dash-dot line. Approximately 1 foot should be left void at each end of the roll. Near each end of the roll, pertinent information will be shown, including job name, item number, inclusive stations, contract number, completion data and name of inspector. Sections plotted by the electronic plotter will be acceptable. Pencil work will be such firmness and line weight that a good reproduction may be obtained.

#### 1.41 COOPERATION WITH OTHER CONTRACTORS

If other construction in the area is in progress under other contracts, all contractors may be required to use the same access. Such shared access shall not be the basis for any contract claim. The Contractor shall fully cooperate with each other and with Government employees and carefully coordinate his work with adjacent work as may be directed by the Contracting Officer. The Contractor shall not commit or permit any act which will interfere with the performance of work on adjacent items by the other Contractor(s) or by Government employees. See also Contract Clause entitled OTHER CONTRACTS.

#### 1.42 LAYOUT OF WORK

The Government will establish the base lines and bench marks at each site of work:

- a. Two control points will be furnished on the base line at each site.
- b. One bench mark will be furnished at each site.

#### 1.43 DELIVERY OF STONE

Notwithstanding any other provision of this contract, the Contractor is required to deliver stone to the site utilizing any means necessary for diligent prosecution of the work. Such means include, but are not limited to, those facilities of transportation set out in Section 00800 SPECIAL CONTRACT REQUIREMENTS, paragraph PHYSICAL DATA, paragraphs c(1), c(2), and c(3). River stages unfavorable to barging of stone to the site will not be considered grounds for excusable delay and/or time extension.

#### PART 2 PRODUCTS (Not Applicable)

PART 3    EXECUTION (Not Applicable)

-- End of Section --

SAFETY INSPECTION CHECK LIST FOR CONSTRUCTION EQUIPMENT U. S. Army Engineer Division, Mississippi Valley		Date of Inspection		
Contractor or Unit		Contract No. or Activity		
Inspected by (Signature)		Approved by (Signature)		
Activity Inspected:				
<b>NIGHT OPERATIONS</b>				
<b>NOTE:</b> Corps of Engineers General Safety Requirements (EM 385-1-1) references are shown in parentheses.		Yes	No	Not App
1. General:				
a. On construction contracts, is there a designated Contractor's representative on duty during night operations?*				
b. Does the contractor have an approved Activity Hazard Analysis for night operations? (01.A.09)				
c. Has Activity Hazard Analysis been reviewed by all employees prior to start of operation and documented? (01.B.03)				
d. Is each new employee provided with initial safety orientation? (01.B.01)				
e. Are emergency phone numbers posted and at least 2 qualified first aid and CPR attendants on duty? (03.A.01, 03.A.02)				
f. Are weekly safety meetings being held for night shift employees, by field supervisors or foremen?				
g. Are regularly scheduled safety meetings being held, at least once a month, for night shift supervisors? (03.B.03)				
h. Are outlines of each safety meeting being maintained at project site? (01.B.03)				
2. Lighting:				
a. Is there adequate lighting in work areas? (07.A.01, Table 7-1, 16.A.11)				
b. Is there adequate lighting on decks, walkways and floating plant? (07.A.01, Table 7-1)				
c. Is there adequate lighting at crew boat loading dock and unloading areas? (07.A.01, Table 7-1)				
d. Are semi-portable equipment, floodlights, and work lights provided with protective grounding, if not exempted by NEC? (11.C.01)				
3. Transportation to and from floating plant:				
a. Is boat equipped with sufficient number of life preservers? (05.I.01)				
b. Is weather deck of boat coated with non-skid material? (19.B.01)				
c. Do guardrails meet requirements of EM 385-1-1? (19.B.01, 21.B.01, 21.B.07)				
d. If boat is more than 26 feet in length, does operator hold a current Coast Guard license? (19.A.02)				
e. If more than 6 passengers are carried, or boat length is greater than 26 feet in length, is vessel Coast Guard certified and operator licensed? (19.A.02)				
f. Does motor boats and skiffs meet minimum flotation requirements of Coast Guard? (19.C.02)				
g. Does boat have running lights as required by 33 CFR 81 APPA and 33 CFR 84 ANNEX 1 (regardless of length)?				
h. Is the capacity of boat and maximum no. of passengers posted in accordance with EM-385-1-1? (19.C.03)				
j. Is there safe, easy access from boat to landing? (19.B.01, 19.B.02))				
4. Miscellaneous:				
a. Are haul roads properly marked for night work?				
b. Are necessary access and haul roads provided to work area? (21.I.01)				
c. Are all employees dressed suitable for night operations? Minimum shall be short sleeve shirt, long trousers and leather or other protective work shoes.				
d. Are all vehicles and construction equipment properly lighted for night work? (18.A.04, 16.A.11)				
e. Does flag or signal person have reflectorized warning garments? (08.B.08)				
f. Are all spotters or signal personnel adequately trained for operation? (08.B.10)				
5. REMARKS:				
* (Ref. Contract General Provisions).				

SAFETY INSPECTION CHECK LIST FOR CONSTRUCTION EQUIPMENT U. S. Army Engineer Division, Mississippi Valley		Date of Inspection		
Contractor or Unit		Contract Number - Job Description		
Type of Equipment & Boom Length		Make, Model No., Identification		
Inspected by (Signature)		Approved by (Signature)		
<b>CRANES AND DERRICKS</b> <b>NOTE:</b> Corps of Engineers General Safety Requirements (EM 385-1-1) references are shown in parentheses.		Yes	No	Not App
1. Is a list of the required clearances from overhead power lines posted? If necessary to work near power lines, boom shall have insulating cage guard and load line shall have insulating link. (11.E.04, 11.E.07)				
2. Are load rating charts with the machine? (16.C.01, 16.C.13)				
3. Is a list of standard hand signals posted in cab? (16.C.10, 08.B.01, 08.B.02)				
4. Are shock absorbing boom stops installed on machine? (16.D.02)				
5. Has the manufacturer certified the boom stops? (16.D.02)				
6. Does the boom angle, levelness, and other indicators operate accurately? (16.D.01)				
7. Does the unit have a suitable fire extinguisher? (16.A.26)				
8. Are moving parts, gears, drums, shafts, belts adequately screened or guarded? (16.B.03)				
9. Is there adequate protection from hot pipes, etc? (16.B.03)				
10. Are steps, ladders, guard rails, provided for safe footing and access? (16.B.03, 21.A.01)				
11. Can lubrication and greasing be done safely? (16.B.13)				
12. Is the cab equipped with unbroken distortion free safety glass? (16.B.10)				
13. Is fuel tank located so that overflow and spills will not run into cab or come in contact with exhaust ? (16.B.04)				
14. Is the unit shut down for fueling, servicing, etc? (16.A.14)				
15. Are slings, fastenings, fittings inspected daily by a qualified person? * Is wire rope inspected by a competent person frequently? (Section 15)				
16. When wedge socket type fasteners are used, has the dead end been made secure against loosening? (15.B.04)				
17. Have the air tanks been tested and certified? (20.A.02)				
18. Are test and inspection records kept available as a part of the official project file? (16.A.01)				
19. Is there evidence of deformed, cracked, or corroded members in the crane structure or boom? * (ANSI)				
20. Do the drums have proper pawls or positive locking devices? (16.B.14)				
21. Is there sufficient cable available so as to allow three full wraps on the drum at all working positions? (16.C.09)				
22. Are daily inspections being made of all control mechanisms to assure that there is no maladjustment interfering with proper operation? *				
23. Are inspections being made, at least monthly, of control mechanisms for excessive wear of components, and contamination by lubricants, or other foreign matter? *				
24. Are frequent (daily to monthly) inspections being made of all safety devices? *				
25. Are daily inspections for deterioration, or leakage in air or hydraulic systems being made? *				
26. Are crane hook inspections being made frequently (daily to monthly) to assure that there are no cracks or that the normal hook throat opening has not increased more than 15% *				
27. Is there evidence of loose bolts or rivets? * (ANSI)				
28. Is there evidence of cracked or worn sheaves or drums? (15.F.04)				
29. Are parts such as pins, bearings, shafts, gears, rollers, and locking devices worn, cracked, or distorted?				
* (Ref Contract Special Clauses)		(Continued on reverse)		



CRANES AND DERRICKS						Yes	No	Not App																																														
30. Is there evidence of excessive wear on brake and clutch system parts? *																																																						
31. Is there evidence of excessively worn or damaged tires? *																																																						
32. Is the power plant in good mechanical condition? *																																																						
33. Are accessible areas within the swing radius of the rear barricaded? (16.C.08)																																																						
34. Has a boom hoist disengaging device been installed on cranes with cable supported booms? (16.D.02)																																																						
35. Is there a current set of operator's manuals available? (16.C.01)																																																						
36. Are cranes and derricks operated by qualified operators? (16.C.04)																																																						
37. Have lattice and Hydraulic cranes been equipped with a device to stop the load hoisting before the load block contacts the boom tip? (16.D.01)																																																						
<p>38. <u>Crane Stability Test:</u></p> <p style="margin-left: 40px;">Amount of counterweight: _____ lb.</p>  <table border="1" style="width: 100%; border-collapse: collapse; margin-left: 40px;"> <thead> <tr> <th rowspan="2" style="width: 10%;">Boom Angle</th> <th rowspan="2" style="width: 15%;">Distance from Center Pin to Load Line R (ft)</th> <th colspan="2" style="width: 20%;">Tipping Load I (lb)</th> <th colspan="2" style="width: 20%;">Moment R x I</th> <th colspan="2" style="width: 20%;">Maximum Allowable Load L=0.75 I</th> </tr> <tr> <th style="width: 10%;">With Outriggers</th> <th style="width: 10%;">Without Outriggers</th> <th style="width: 10%;">With Outriggers</th> <th style="width: 10%;">Without Outriggers</th> <th style="width: 10%;">With Outriggers</th> <th style="width: 10%;">Without Outriggers</th> </tr> </thead> <tbody> <tr> <td>20°</td> <td>_____</td> <td>_____</td> <td>_____</td> <td>_____</td> <td>_____</td> <td>_____</td> <td>_____</td> </tr> <tr> <td>40°</td> <td>_____</td> <td>_____</td> <td>_____</td> <td>_____</td> <td>_____</td> <td>_____</td> <td>_____</td> </tr> <tr> <td>60°</td> <td>_____</td> <td>_____</td> <td>_____</td> <td>_____</td> <td>_____</td> <td>_____</td> <td>_____</td> </tr> <tr> <td>80°</td> <td>_____</td> <td>_____</td> <td>_____</td> <td>_____</td> <td>_____</td> <td>_____</td> <td>_____</td> </tr> </tbody> </table>									Boom Angle	Distance from Center Pin to Load Line R (ft)	Tipping Load I (lb)		Moment R x I		Maximum Allowable Load L=0.75 I		With Outriggers	Without Outriggers	With Outriggers	Without Outriggers	With Outriggers	Without Outriggers	20°	_____	_____	_____	_____	_____	_____	_____	40°	_____	_____	_____	_____	_____	_____	_____	60°	_____	_____	_____	_____	_____	_____	_____	80°	_____	_____	_____	_____	_____	_____	_____
Boom Angle	Distance from Center Pin to Load Line R (ft)	Tipping Load I (lb)		Moment R x I		Maximum Allowable Load L=0.75 I																																																
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<p>39. <u>Performance Test:</u></p> <p style="margin-left: 40px;">a. Complete items 1-32 on this form.</p> <p style="margin-left: 40px;">b. Determine performance test load (PTL) from the stability test above with the boom at the 80° position. PTL=(1.25)(L)</p> <p style="margin-left: 40px;">c. Position the boom in the 80° position and allow the crane to lift, lower, and hold the performance test load.</p>																																																						
<p>40. Remarks</p>																																																						

SAFETY INSPECTION CHECK LIST FOR CONSTRUCTION EQUIPMENT U. S. Army Engineer Division, Mississippi Valley		Date of Inspection		
Contractor or Unit		Contract Number - Job Description		
Type of Equipment		Identification		
Inspected by (Signature)		Approved by (Signature)		
<b>CRAWLER TRACTORS - DOZERS</b> <b>NOTE:</b> Corps of Engineers General Safety Requirements (EM 385-1-1) references are shown in parentheses.		Yes	No	Not App
1. Is protection, (grills, canopies, screens) provided to shield operator from falling or flying objects? (16.B.10, 16.B.11)				
2. Is adequate roll over protection provided? (16.B.12)				
3. Are seat belts provided? (16.B.08, 16.b.12)				
4. Is the operator physically qualified? (01.C.01)				
5. Does the unit have a suitable fire extinguisher? (16.A.26)				
6. Is there an effective, working reverse alarm? (16.B.01)				
7. Are moving parts, shafts, sprockets, belts, etc. guarded? (16.B.03, 16.B.07)				
8. Is protection against contact with hot surfaces, exhaust, etc. provided? (16.B.03)				
9. Are all screens, guards, shields in place and effective? (16.B.03)				
10. Is the unit shut down for fueling, servicing, etc? (16.A.14)				
11. Is the dozer blade lowered when not in use? (16.A.09)				
12. Are sufficient lights provided for night operations? (16.A.11)				
13. Are there initial inspections and scheduled inspections of the equipment at regular intervals? (16.A.01, 16.A.02)				
14. Are fuel tanks located in a manner to prevent spills or overflows from running onto engine, exhaust, or electrical equipment? (16.B.04)				
15. Are exhaust discharges from equipment so directed that they do not endanger persons or obstruct the view of the operator? (16.B.05)				
16. Are inspection records kept available as a part of the official project file? (16.A.01)				
28. REMARKS:				

SAFETY INSPECTION CHECK LIST FOR CONSTRUCTION EQUIPMENT U. S. Army Engineer Division, Mississippi Valley		Date of Inspection		
Contractor or Unit		Contract Number - Job Description		
Type of Equipment & Boom Length		Make, Model No., Identification		
Inspected by (Signature)		Approved by (Signature)		
Equipment Inspected:				
<b>DRAGLINES</b> <b>NOTE:</b> Corps of Engineers General Safety Requirements (EM 385-1-1) references are shown in parentheses.		Yes	No	Not App
1. Is a list of the required clearances from overhead power lines posted? If necessary to work near power lines, boom shall have insulating cage guard and load line shall have insulating link. (11.E.04, 11.E.07)				
2. Does the unit have a suitable fire extinguisher? (16.A.26)				
3. Are moving parts, gears, drums, shafts, belts adequately screened or guarded? (16.B.03)				
4. Is there adequate protection from hot pipes, etc? (16.B.03)				
5. Are steps, ladders, guardrails, provided for safe footing and access? (16.B.03)				
6. Can lubrication and greasing be done safely? (16.A.08, 16.B.13)				
7. Is the cab equipped with unbroken safety glass? (16.B.10)(18.A.07)				
8. Is the fuel tank located so that overflow and spills will not run into cab or come in contact with exhaust? (16.B.04)				
9. Is the unit shut down for fueling, servicing, etc? (16.A.14)				
10. Is wire rope being inspected by a competent person frequently? (Daily to Monthly) (15.A.02)				
11. When wedge socket type fasteners are used, has the dead end been made secure against loosening? (15.B.04)				
12. Have the air tanks been tested and certified? (20.A.02,20.A.03)				
13. Are test records kept available as part of the official project file? (16.A.01)				
14. Is there evidence of deformed, cracked, or corroded members in the crane structure or boom?				
15. Do the drums have proper pawls or positive locking devices? (16.B.14)				
16. Is there sufficient cable available so as to allow three full wraps on the drum at all working positions? (16.C.09)				
17. Are daily inspections being made of all control mechanisms to assure that there is no maladjustment interfering with proper operation? (16.A.01,.02,.05)				
18. Are inspections being made, at least monthly, of control mechanisms for excessive wear of components, and contamination by lubricants, or other foreign matter? (16.A.01,.02,.05)				
19. Are frequent (daily to monthly) inspections being made of all safety devices? (16.A.01,.02,.05)				
20. Are daily inspections for deterioration, or leakage in air or hydraulic systems being made? (16.A.01,.02,.05)				
21. Is there evidence of loose bolts or rivets?				
22. Is there evidence of cracked or worn sheaves or drums?				
23. Are parts such as pins, bearings, shafts, gears, rollers, and locking devices worn, cracked, or distorted?				
24. Is there evidence of excessive wear on brake and clutch system parts?				
25. Is there evidence of excessively worn or damaged tires?				
26. Is the power plant in good mechanical condition?				
27. Is there evidence that the operator(s) are physically and emotionally qualified? (01.C.01)				
28. REMARKS:				

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## SECTION 01090

### SOURCES FOR REFERENCE PUBLICATIONS

#### PART 1 GENERAL

##### 1.1 REFERENCES

Various publications are referenced in other sections of the specifications to establish requirements for the work. These references are identified in each section by document number, date and title. The document number used in the citation is the number assigned by the sponsoring organization, e.g.

UL 1 (1993; Rev thru Jan 1995) Flexible Metal Conduit. However, when the sponsoring organization has not assigned a number to a document, an identifying number has been assigned for convenience, e.g. UL's unnumbered 1995 edition of their Building Materials Directory is identified as UL-01 (1995) Building Materials Directory. The sponsoring organization number (UL 1) can be distinguished from an assigned identifying number (UL-01) by the lack of a dash mark (-) in the sponsoring organization assigned number.

##### 1.2 ORDERING INFORMATION

The addresses of the organizations whose publications are referenced in other sections of these specifications are listed below, and if the source of the publications is different from the address of the sponsoring organization, that information is also provided. Documents listed in the specifications with numbers which were not assigned by the sponsoring organization should be ordered from the source by title rather than by number.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)  
100 Barr Harbor Drive  
West Conshohocken, PA 19428-2959  
Ph: 610-832-9500  
Fax: 610-832-9555  
E-mail: [cservice@astm.org](mailto:cservice@astm.org)

CODE OF FEDERAL REGULATIONS (CFR)  
Order from:  
Government Printing Office  
Washington, DC 20402  
Ph: 202-512-1800  
Fax: 202-275-7703  
Internet: <http://www.pls.com:8001/his/cfr.html>

CORPS OF ENGINEERS (COE)  
Order from:  
U.S. Army Engineer Waterways Experiment Station  
ATTN: Technical Report Distribution Section, Services  
Branch, TIC  
3909 Halls Ferry Rd.  
Vicksburg, MS 39180-6199  
Ph: 601-634-2355  
Fax: 601-634-2506

ENGINEERING MANUALS (EM)  
USACE Publications Depot  
Attn: CEIM-SP-D  
2803 52nd Avenue  
Hyattsville, MD 20781-1102  
Ph: 301-394-0081

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## SECTION 01130

### ENVIRONMENTAL PROTECTION

#### PART 1 GENERAL

##### 1.1 DEFINITIONS

Environmental pollution and damage is defined as the presence of chemical, physical, or biological elements or agents that adversely affect human health or welfare; unfavorably alter ecological balances of importance to life; or degrade the environment for aesthetic, cultural or historical purposes. Environmental protection is the prevention and/or control of pollution that develops during normal construction practice. The control of environmental pollution and damage requires consideration of air, water, soil, and land resources; and includes management of visual aesthetics; noise; solid, chemical, and liquid waste; radiant energy and radioactive materials; and other pollutants.

##### 1.2 PAYMENT

No separate payment or direct payment will be made for the cost of the work covered under this section, and such work will be considered as a subsidiary obligation of the Contractor.

##### 1.3 ENVIRONMENTAL PROTECTION REQUIREMENTS

A plan shall be developed to provide for environmental protective measures to prevent and/or control pollution that may develop during construction. The plan shall contain protective measures required to prevent or correct conditions that may develop during the construction. The Contractor shall comply with applicable Federal, State, and local laws and regulations concerning environmental pollution control and abatement, as well as the specific requirements stated in other contract specifications. The liability for environmental noncompliance shall be borne by the Contractor.

##### 1.3.1 Environmental Protection Plan

Within 15 days after receipt of Notice of Award of the contract and at least 7 days prior to the Preconstruction Conference, the Contractor shall submit in writing an Environmental Protection Plan. No physical work at the site shall begin until the Contracting Officer has approved the plan and provided specific authorization to start a phase of the work. Preparation and submittal of supplemental plan(s) may be necessary for later phases of work. A copy of the complete Environmental Protection Plan shall be maintained on-site at all times during the life of the contract. The environmental protection plan shall include but not be limited to the following.

##### 1.3.1.1 Protection of Features

In accordance with Contract Clause PROTECTION OF EXISTING VEGETATION, STRUCTURES, EQUIPMENT, UTILITIES, AND IMPROVEMENTS, the Contractor shall develop methods for the protection of features to be preserved within authorized work areas. The Contracting Officer will prepare a list of resources needing protection and preservation (i.e., trees, shrubs, vines,

grasses and ground cover, landscape features, air quality, noise levels, surface and ground water quality, fish and wildlife, soil, historic, archaeological and cultural resources). The Contractor's plan shall identify methods to protect these and other resources present and specify measures to protect the environment should an accident, natural causes of pollution, or failure to follow the environmental protection plan occur during construction. The Contractor's plan shall specify how the quality and protective measures of these resources shall be monitored. Furthermore the Contractor's plan shall specify how and where waste shall be disposed.

#### 1.3.1.2 Procedures

The Contractor shall implement procedures to provide the required environmental protection and to comply with the applicable laws and regulations. The Contractor shall set out the procedures to be followed to correct pollution of the environment due to accident, natural causes or failure to follow the procedures set out in accordance with the environmental protection plan.

#### 1.3.1.3 Permit or License

Notwithstanding the Contract Clause PERMITS AND RESPONSIBILITIES, the Government will obtain a National Pollution Discharge Elimination System (NPDES) Permit for storm water discharges from construction activities. The Contractor shall obtain all other needed permits or licenses. The Contractor shall be responsible for complying with all permits and licenses throughout the duration of this contract.

#### 1.3.1.4 Drawings

The Contractor shall include drawings identifying the areas of limited use or nonuse and show locations of any proposed temporary excavations or embankments for haul roads, stream crossings, material storage areas, structures, sanitary facilities, stockpiles of earth materials, and disposal areas for excess earth material and unsuitable earth materials.

#### 1.3.1.5 Recycling and Waste Prevention Plan

The Contractor shall submit as a part of the Environmental Protection Plan, a Recycling and Waste Prevention Plan.

#### 1.3.1.6 Environmental Monitoring Plans

The Contractor shall include environmental monitoring plans for the job site which incorporate land, water, air and noise monitoring.

#### 1.3.1.7 Traffic Control Plan

The Contractor shall include a traffic control plan for the job site. This plan shall focus on reducing erosion of temporary roadbeds by construction traffic, especially during wet weather, and reducing the amount of mud transported onto paved public roads by motor vehicles or runoff.

#### 1.3.1.8 Surface and Ground Water

The Contractor shall establish methods of protecting surface and ground water during construction activities. These water courses shall be protected from pollutants such as petroleum products, fuels, oils, lubricants, bentonite, bitumens, calcium chloride, acids, waste washings,

sewage, chlorinated solutions, herbicides, insecticides, lime, wet concrete, cement, silt, or organic or other deleterious material. Chemical emulsifiers, dispersants, coagulants, or other cleanup compounds shall not be used without prior written approval from the Contracting Officer. Waters used to wash equipment shall be disposed to prevent entry into a waterway until treated to an acceptable quality. Fuels, oils, greases, bitumens, chemicals, and other nonbiodegradable materials shall be contained with total containment systems and removed from the site for disposal in an approved manner.

#### 1.3.1.9 Noise Intrusion

The Contractor shall exercise controls to minimize damage to the environment by noise from construction activities. All Contractor's, subcontractors', and suppliers' equipment used on or in the vicinity of the job site shall be equipped with noise suppression devices. Equipment not so suppressed and properly maintained must be approved for use in writing by the Contracting Officer. Areas that have noise levels greater than 85 dB continuous or 140 dB peak (unweighted) impulse must be designated as noise hazardous areas. These work areas must have caution signs displayed at the perimeter of the noise area indicating the presence of hazardous noise levels and requiring the use of hearing protection devices.

#### 1.3.1.10 Work Area Plan

The Contractor shall include a work area plan showing the proposed activity in each portion of the area and identifying the areas of limited use or nonuse. The plan shall include measures for marking the limits of use areas.

#### 1.3.1.11 Plan of Borrow Area(s)

The Contractor shall include a plan of borrow area(s) for the project.

#### 1.3.1.12 Contaminant Prevention Plan

The Contractor shall identify potentially hazardous substances to be used on the job site and intended actions to prevent accidental or intentional introduction of such materials into the air, water or ground. The Contractor shall detail provisions to be taken to meet Federal, State and local laws and regulations regarding the storage and handling of these materials. The plan shall include, but not be limited to, plans for preventing polluted runoff from plants, parked equipment, and maintenance areas from entering local surface and ground water sources.

#### 1.3.1.13 Not Used

### 1.4 ENVIRONMENTAL LITIGATION

a. If the performance of all or any part of the work is suspended, delayed, or interrupted due to an order of a court of competent jurisdiction as a result of environmental litigation, as defined below, the Contracting Officer, at the request of the Contractor, shall determine whether the order is due in any part to the acts or omissions of the Contractor, or a Subcontractor at any tier, not required by the terms of the contract. If it is determined that the order is not due in any part to acts or omissions of the Contractor, or a Subcontractor at any tier, other than as required by the terms of this contract, such suspension, delay, or interruption shall be considered as if ordered by

the Contracting Officer in the administration of this contract under the terms of the SUSPENSION OF WORK clause of this contract. The period of such suspension, delay, or interruption shall be considered unreasonable, and an adjustment shall be made for any increase in the cost of performance of this contract (excluding profit) as provided in that clause, subject to all the provisions thereof.

b. The term "Environmental Litigation", as used herein, means a lawsuit alleging that the work will have an adverse effect on the environment or that the Government has not duly considered, either substantively or procedurally, the effect of the work on the environment.

## PART 2 PRODUCTS (Not Applicable)

## PART 3 EXECUTION

### 3.1 PROTECTION OF ENVIRONMENTAL RESOURCES

The Contractor shall protect the environmental resources (such as, but not limited to, historic, archaeological and cultural resources; land, water, and air resources; and fish and wildlife resources) within the project boundaries and those affected outside the limits of permanent work under this contract according to Federal, State, and local laws during the entire period of the contract.

#### 3.1.1 Protection of Land Resources

In accordance with Contract Clause PROTECTION OF EXISTING VEGETATION, STRUCTURES, EQUIPMENT, UTILITIES, AND IMPROVEMENTS, the land resources within the project boundaries and those affected outside the limits of work under this contract shall be preserved in their present condition or be restored to an equivalent condition upon completion of the work. Prior to initiating any construction, the Contractor shall identify all land resources to be preserved within the work area, including those identified by the Contracting Officer. The Contractor shall not remove, cut, deface, injure, or destroy land resources including trees, shrubs, vines, grasses, topsoil, and landforms without permission from the Contracting Officer unless otherwise specified. No ropes, cables, or guys shall be fastened to or attached to any trees for anchorage unless specifically authorized. Where such special emergency use is permitted, the Contractor shall provide effective protection for land and vegetation resources at all times and shall be responsible for any subsequent damage as defined in the following subparagraphs.

##### 3.1.1.1 Work Area Limits

Prior to any construction, the Contractor shall mark the areas within the designated work areas that are not required to accomplish work to be performed under this contract and which are to be protected. Isolated areas within the general work area which are to be saved and protected shall be marked or fenced. Monuments and markers shall be protected during construction. Where construction operations are to be conducted during darkness, the markers shall be visible. The Contractor shall convey to his personnel the purpose of marking and protecting all necessary objects.

##### 3.1.1.2 Protection of Landscape

Trees, shrubs, vines, grasses, landforms and other landscape features,

indicated and defined on the drawings to be preserved shall be clearly identified by marking, fencing, or wrapping with boards, or other approved techniques.

#### 3.1.1.3 USDA Quarantined Considerations

See Section 01000 GENERAL CONTRACT REQUIREMENTS, paragraph WORK IN QUARANTINED AREA.

#### 3.1.1.4 Location of Contractor On-Site Facilities

The Contractor's on-site field offices, staging areas, stockpile storage, and temporary buildings shall be placed in approved areas. Temporary movement or relocation of Contractor on-site facilities shall be only on approval by the Contracting Officer.

#### 3.1.1.5 Borrow Areas

Borrow areas on and off Government right-of-way shall be managed by the Contractor to minimize erosion and to prevent sediment from entering nearby water courses or lakes, or affecting known or discovered cultural resource properties. All borrow areas outside the construction limits that are operated by the Contractor shall be reclaimed to provide for the protection and subsequent beneficial use of the mined and reclaimed land. Before obtaining material from any borrow source located outside the project limits, whether operated by the Contractor or by an independent supplier, the Contracting Officer shall be informed in writing of the location of such source(s), the names of the owner and operator, and the types and estimated quantities of materials to be obtained from each source. The Contractor shall be responsible for full compliance with all Federal, State and local requirements regarding the collection and use of borrow material.

#### 3.1.1.6 Disposal Areas on Government Property

Material disposal on government property shall be limited to those areas designated on the contract drawings. The designated disposal areas shall be managed and controlled to prevent erosion of soil or sediment from entering nearby water courses or lakes. Special emphasis is placed on avoiding impacts to wetlands. Disposal areas shall be developed and managed in accordance with the grading plan indicated on the contract drawings or as approved.

#### 3.1.1.7 Disposal of Solid Wastes

Solid wastes (not including clearing debris) shall be any waste excavated or generated by the Contractor (as described by Federal, State, and local laws and regulations). Solid waste shall be placed in containers and disposed on a regular schedule. All handling and disposal shall be conducted to prevent spillage and contamination. The Contractor shall participate in any State or local recycling programs to reduce the volume of solid waste materials at the source whenever practical.

#### 3.1.1.8 Disposal of Hazardous Wastes

Hazardous waste shall be stored, removed from the work area, and disposed of in accordance with Federal, State, and local laws and regulations. Hazardous waste shall not be dumped onto the ground, into storm sewers or open water courses, or into the sanitary sewer system. Fueling and lubrication of equipment and motor vehicles shall be conducted in a manner

that affords the maximum protection against spills and evaporation.

#### 3.1.1.9 Disposal of Discarded Materials

Discarded materials that cannot be included in the solid waste category shall be handled as approved.

#### 3.1.1.10 Disposal of Waste Oils

Waste oils and/or lubricants shall be disposed of in accordance with all Federal, State, and local laws and regulations. The Contractor shall collect waste oil and/or lubricants in leak-tight containers, ensure that all openings on the containers are tightly sealed (including the drum ring and bung closures), and label the containers to clearly indicate contents. Disposal through a waste oil recycler is required. The Contractor shall ensure that the recycler has all appropriate State and Federal permits.

#### 3.1.2 Historical, Archaeological and Cultural Resources

The Contractor shall take precautions to preserve existing historical, archaeological and cultural resources. The Contractor shall install protection for these resources and shall be responsible for their preservation during this contract. If during construction activities the Contractor observes items that may have archaeological or historic value (e.g., when Native American human remains and associated objects are discovered), the Contractor shall stop work in the area, leave the items undisturbed, and immediately report the find to the Contracting Officer. Such items may include historic artifacts of glass, metal and ceramics, or prehistoric artifacts such as stone tools, ceramics, bone, and shell. The Contractor shall not judge the potential significance of any suspected cultural material, but shall report all findings to the Contracting Officer.

#### 3.1.3 Protection of Water Resources

The Contractor shall keep construction activities under surveillance, management, and control to avoid pollution of surface and ground waters. Discharges of any pollutant into the water courses is strictly prohibited, unless excepted by the Contracting Officer.

##### 3.1.3.1 Waste Water

Waste water directly derived from washing equipment, or any other construction activities shall not be discharged into natural water areas. Waste water shall be collected and placed in settling ponds where the suspended materials can settle or the water evaporate in order to separate the pollutants from the water. See paragraph SETTling POND REMOVAL for disposal procedures.

##### 3.1.3.2 Monitoring of Water Areas Affected by Construction Activities

The Contractor shall be responsible for monitoring all water areas affected by construction activities. In the event that water quality violations result from the Contractor's operation, the Contractor shall suspend the operation or operations causing the pollution, and such suspension shall not form the basis for a claim against the Federal government. Compliance with the Federal, State, and local laws and regulations and conditions of any permits and clearances obtained for the work shall be the Contractor's responsibility. In accordance with the Contract Clause PERMITS AND RESPONSIBILITIES, the Contractor shall perform all work in compliance with

the provisions of the contract and applicable Federal, State, and local environmental laws and regulations with regard to surface or subsurface waters within or adjacent to the project areas.

#### 3.1.4 Protection of Aquatic and Wildlife Resources

The Contractor shall keep construction activities under surveillance, management, and control to prevent interference with, disturbance to, and damage to aquatic resources and/or wildlife. Species that require specific attention as defined by law or specified by the Contracting Officer, along with measures for their protection, shall be listed by the Contractor prior to beginning of construction operations.

#### 3.1.5 Protection of Air Resources

The Contractor shall keep construction activities under surveillance, management and control to minimize pollution of air resources. In accordance with the Contract Clause PERMITS AND RESPONSIBILITIES, all activities, equipment, processes, and work operated or performed by the Contractor in accomplishing the specified construction shall be in strict accordance with all applicable Federal, State, and local emission and performance laws and standards. Special management techniques as set out below shall be implemented to control air pollution by the construction activities.

##### 3.1.5.1 Particulates

Dust particles, aerosols, and gaseous by-products from all construction activities, disturbed areas, and/or processing and preparation of materials, such as from asphaltic batch plants, shall be controlled at all times, including weekends, holidays, and hours when work is not in progress. The Contractor shall maintain all excavations, stockpiles, haul roads, permanent and temporary access roads, plant sites, disposal sites, borrow areas, and all other work areas within or outside the project boundaries free from particulates which would cause air pollution standards specified in paragraph PROTECTION OF AIR RESOURCES to be exceeded or which would cause a hazard or a nuisance. Sprinkling, chemical treatment of an approved type, light bituminous treatment, baghouse, scrubbers, electrostatic precipitators, or other methods will be permitted to control particulates in the work area. Sprinkling shall be repeated at such intervals as to keep the disturbed area damp at all times.

##### 3.1.5.2 Hydrocarbons and Carbon Monoxide

Hydrocarbons and carbon monoxide emissions from equipment shall be controlled to Federal, State, and local allowable limits at all times.

##### 3.1.5.3 Volatile Organic Compound (VOC)

The Contractor shall comply with Federal, State, and local laws and regulations pertaining to emission of VOC vapors at all times.

##### 3.1.5.4 Odors

Odors shall be controlled at all times for all construction activities, including processing and preparation of materials.

##### 3.1.5.5 Monitoring Air Quality

Monitoring of air quality at the construction site(s) shall be the responsibility of the Contractor.

### 3.2 NONCOMPLIANCE

If the Contracting Officer notifies the Contractor in writing of any observed noncompliance with contract requirements or Federal, State, or local laws, regulations, or permits, the Contractor shall take all necessary action to correct the noncompliance. If the Contractor fails to comply promptly, the Contracting Officer may issue an order stopping all or part of the work until satisfactory corrective action is taken. No time extensions will be granted or costs or damage allowed to the Contractor for any such suspension. (See also the Contract Clause PERMITS AND RESPONSIBILITIES.)

### 3.3 CLEANUP OF CONTAMINANT RELEASES

The Contractor shall provide the Contracting Officer for approval, a containment cleanup plan including the procedures, instructions, and reports to be used in the event of an unforeseen substance release. This plan shall include as a minimum:

- a. The name of the individual who will be responsible for implementing and supervising the containment and cleanup.
- b. A list of materials and equipment to be immediately available at the job site, tailored to cleanup work of the potential hazard(s) identified.
- c. The names and locations of suppliers of containment materials and locations of additional fuel oil recovery, cleanup, restoration, and material placement equipment available in case of an unforeseen spill emergency.
- d. The methods and procedures to be used for expeditious contaminant cleanup.
- e. The name of the individual who will report any spills or hazardous substance releases and who will follow up with complete documentation. This individual shall immediately notify the Contracting Officer in addition to the legally required reporting channels when a reportable quantity spill of oil or hazardous substance occurs.

### 3.4 POST CONSTRUCTION CLEANUP

#### 3.4.1 Construction Areas

The Contractor shall clean up areas used for construction and remove all signs of temporary construction facilities; Contractor office, storage and staging areas; quarry and borrow areas, and all other areas used by the Contractor during construction. Furthermore, the disturbed areas shall be graded and filled as approved by Contracting Officer. Restoration of original contours is not required unless specified in another section. (See also the Contract Clause CLEANING UP.)

#### 3.4.2 Settling Pond Removal

The Contractor shall provide the Contracting Officer a settling pond removal plan 120 days prior to removal work. The plans shall include the



method of removing and testing of the sediment collected in the settling pond. The test results will determine what disposition is required of the sediment to comply with Federal, State, and local transport and disposal regulations. The tests performed shall be in compliance with the Environmental Protection Agency standard methods and the State's Environmental Quality testing requirements.

### 3.5 RESTORATION OF LANDSCAPE DAMAGE

All landscape features damaged or destroyed during construction operations that were not identified for removal shall be restored. Any vegetation or landscape feature damaged shall be restored as nearly as possible to its original condition. (See also the Contract Clause PROTECTION OF EXISTING VEGETATION, STRUCTURES, EQUIPMENT, UTILITIES, AND IMPROVEMENTS.)

### 3.6 MAINTENANCE OF POLLUTION FACILITIES

The Contractor shall maintain all constructed facilities and portable pollution control devices for the duration of the contract or for the length of time construction activities create the particular pollutant.

### 3.7 TRAINING OF CONTRACTOR PERSONNEL IN POLLUTION CONTROL

Contractor personnel shall be trained in environmental protection and conduct environmental protection meetings monthly. The training and meeting agenda shall include methods of detecting and avoiding pollution, familiarization with pollution standards, both statutory and contractual, and installation and care of facilities (vegetative covers, and instruments required for monitoring purposes) to insure adequate and continuous environmental pollution control. Personnel are to be informed of provisions for hazardous and toxic materials container labeling and for managing Material Safety Data Sheets (MSDS). Anticipated hazardous or toxic chemicals shall also be reviewed. Other items to be discussed shall include recognition and protection of archaeological sites and artifacts. The Contractor shall include training topics discussed and attendance as a part of his daily CQC Report.

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## SECTION 01330

### SUBMITTAL PROCEDURES

#### PART 1 GENERAL

##### 1.1 SUBMITTAL CLASSIFICATION

Submittals are identified with submittal description (SD) numbers and are classified as follows:

###### 1.1.1 Government Approved

Governmental approval is required for extensions of design, critical materials, deviations, equipment whose compatibility with the entire system must be checked, and other items as designated by the Contracting Officer.

Within the terms of the Contract Clause SPECIFICATIONS AND DRAWINGS FOR CONSTRUCTION, they are considered to be "shop drawings."

###### 1.1.2 Information Only

All submittals not requiring Government approval will be for information only. They are not considered to be "shop drawings" within the terms of the Contract Clause referred to above.

##### 1.2 SUBMITTALS

The submittals described below are those required and further described in other sections of the specifications. Submittals required by the CONTRACT CLAUSES and other non-technical parts of the contract are not included in this section.

###### SD-09 Reports

Reports of inspection and laboratory test, including analysis and interpretation of test results. Test methods used and compliance with recognized test standards shall be described.

###### SD-13 Certificates

Statement signed by responsible official of a manufacturer of a product, system or material, attesting that the product, system or material meets specified requirements. The statement must be dated after the award of this contract, name the project, and list the specific requirements which it is intended to address.

##### 1.3 APPROVED SUBMITTALS

The Contracting Officer's approval of submittals shall not be construed as a complete check, but will indicate only that the general method of construction, materials, detailing and other information are satisfactory.

Approval will not relieve the Contractor of the responsibility for any

error which may exist, as the Contractor under the CQC requirements of this contract is responsible for dimensions, the design of adequate connections and details, and the satisfactory construction of all work. After submittals have been approved by the Contracting Officer, no resubmittal for the purpose of substituting materials or equipment will be considered unless accompanied by an explanation of why a substitution is necessary.

#### 1.4 DISAPPROVED SUBMITTALS

The Contractor shall make all corrections required by the Contracting Officer and promptly furnish a corrected submittal in the form and number of copies specified for the initial submittal. If the Contractor considers any correction indicated on the submittals to constitute a change to the contract, a notice in accordance with the Contract Clause CHANGES shall be given promptly to the Contracting Officer.

#### 1.5 WITHHOLDING OF PAYMENT

Payment for materials incorporated in the work will not be made if required approvals have not been obtained.

#### PART 2 PRODUCTS (Not Applicable)

#### PART 3 EXECUTION

##### 3.1 GENERAL

The Contractor shall make submittals as required by the specifications. The Contracting Officer may request submittals in addition to those specified when deemed necessary to adequately describe the work covered in the respective sections. Units of weights and measures used on all submittals shall be the same as those used in the contract drawings. Each submittal shall be complete and in sufficient detail to allow ready determination of compliance with contract requirements. Prior to submittal, all items shall be checked and approved by the Contractor's Quality Control (CQC) representative and each item shall be stamped, signed, and dated by the CQC representative indicating action taken. Proposed deviations from the contract requirements shall be clearly identified. Submittals shall include items such as: Contractor's, manufacturer's, or fabricator's drawings; descriptive literature including (but not limited to) catalog cuts, diagrams, operating charts or curves; test reports; test cylinders; samples; O&M manuals (including parts list); certifications; warranties; and other such required submittals. Submittals requiring Government approval shall be scheduled and made prior to the acquisition of the material or equipment covered thereby. Samples remaining upon completion of the work shall be picked up and disposed of in accordance with manufacturer's Material Safety Data Sheets (MSDS) and in compliance with existing laws and regulations.

##### 3.2 SUBMITTAL REGISTER (ENG FORM 4288)

At the end of this section is one set of ENG Form 4288 listing items of equipment and materials for which submittals are required by the specifications; this list may not be all inclusive and additional submittals may be required. Columns "d" through "p" have been completed by the Government; the Contractor shall complete columns "a" and "r" through "t" and submit the forms to the Contracting Officer for approval within 10 calendar days after Notice to Proceed. The approved submittal register will become the scheduling document and will be used to control submittals

throughout the life of the contract. The submittal register and the progress schedules shall be coordinated.

### 3.3 SCHEDULING

Submittals covering component items forming a system or items that are interrelated shall be scheduled to be coordinated and submitted concurrently. Certifications to be submitted with the pertinent drawings shall be so scheduled. Adequate time (a minimum of 30 calendar days exclusive of mailing time) shall be allowed and shown on the register for review and approval. No delay damages or time extensions will be allowed for time lost in late submittals.

### 3.4 TRANSMITTAL FORM (ENG FORM 4025-R)

The sample transmittal form (ENG Form 4025-R) attached to this section shall be used for submitting both Government approved and information only submittals in accordance with the instructions on the reverse side of the form. These forms will be furnished to the Contractor. This form shall be properly completed by filling out all the heading blank spaces and identifying each item submitted. Special care shall be exercised to ensure proper listing of the specification paragraph and/or sheet number of the contract drawings pertinent to the data submitted for each item.

### 3.5 SUBMITTAL PROCEDURE

Submittals shall be made as follows:

#### 3.5.1 Procedures

Submittals shall be prepared, as specified, with four (4) copies and the original delivered to the Contracting Officer.

#### 3.5.2 Deviations

For submittals which include proposed deviations requested by the Contractor, the column "variation" of ENG Form 4025-R shall be checked. The Contractor shall set forth in writing the reason for any deviations and annotate such deviations on the submittal. The Government reserves the right to rescind inadvertent approval of submittals containing unnoted deviations.

### 3.6 CONTROL OF SUBMITTALS

The Contractor shall carefully control his procurement operations to ensure that each individual submittal is made on or before the Contractor scheduled submittal date shown on the approved "Submittal Register."

### 3.7 GOVERNMENT APPROVED SUBMITTALS

Upon completion of review of submittals requiring Government approval, the submittals will be identified as having received approval by being so stamped and dated. Three (3) copies of the submittal will be retained by the Contracting Officer and one (1) copies of the submittal will be returned to the Contractor.

### 3.8 INFORMATION ONLY SUBMITTALS

Normally submittals for information only will not be returned. Approval of

the Contracting Officer is not required on information only submittals. The Government reserves the right to require the Contractor to resubmit any item found not to comply with the contract. This does not relieve the Contractor from the obligation to furnish material conforming to the plans and specifications; will not prevent the Contracting Officer from requiring removal and replacement of nonconforming material incorporated in the work; and does not relieve the Contractor of the requirement to furnish samples for testing by the Government laboratory or for check testing by the Government in those instances where the technical specifications so prescribe.

### 3.9 STAMPS

Stamps used by the Contractor on the submittal data to certify that the submittal meets contract requirements shall be similar to the following:

<div>CONTRACTOR</div> <div>(Firm Name)</div> <div><div>_____ Approved</div><div>_____ Approved with corrections as noted on submittal data and/or attached sheets(s).</div><div>SIGNATURE: _____</div><div>TITLE: _____</div><div>DATE: _____</div></div>
---

-- End of Section --

<b>TRANSMITTAL OF SHOP DRAWINGS, EQUIPMENT DATA, MATERIAL SAMPLES, OR MANUFACTURER'S CERTIFICATES OF COMPLIANCE</b> <i>(Read instructions on the reverse side prior to initiating this form)</i>	DATE	TRANSMITTAL NO.
---	------	-----------------

**SECTION I - REQUEST FOR APPROVAL OF THE FOLLOWING ITEMS** *(This section will be initiated by the contractor)*

TO:	FROM:	CONTRACT NO.	CHECK ONE: <input type="checkbox"/> THIS IS A NEW TRANSMITTAL <input type="checkbox"/> THIS IS A RESUBMITTAL OF TRANSMITTAL _____
SPECIFICATION SEC. NO. <i>(Cover only one section with each transmittal)</i>	PROJECT TITLE AND LOCATION		CHECK ONE: THIS TRANSMITTAL IS FOR <input type="checkbox"/> FIO <input type="checkbox"/> GOV'T. APPROVAL

ITEM NO.	DESCRIPTION OF ITEM SUBMITTED <i>(Type size, model number/etc.)</i>	MFG OR CONTR. CAT., CURVE DRAWING OR BROCHURE NO. <i>(See instruction no. 8)</i>	NO. OF COPIES	CONTRACT REFERENCE DOCUMENT		FOR CONTRACTOR USE CODE	VARIATION <i>(See instruction No. 6)</i>	FOR CE USE CODE
				SPEC. PARA. NO. <i>e.</i>	DRAWING SHEET NO. <i>f.</i>			
<i>a.</i>	<i>b.</i>	<i>c.</i>	<i>d.</i>	<i>e.</i>	<i>f.</i>	<i>g.</i>	<i>h.</i>	<i>i.</i>

REMARKS	I certify that the above submitted items have been reviewed in detail and are correct and in strict conformance with the contract drawings and specifications except as other wise stated.  _____ NAME AND SIGNATURE OF CONTRACTOR
---------	---

**SECTION II - APPROVAL ACTION**

ENCLOSURES RETURNED <i>(List by Item No.)</i>	NAME, TITLE AND SIGNATURE OF APPROVING AUTHORITY	DATE
---	--	------



## INSTRUCTIONS

1. Section I will be initiated by the Contractor in the required number of copies.
2. Each transmittal shall be numbered consecutively in the space provided for "Transmittal No.". This number, in addition to the contract number, will form a serial number for identifying each submittal. For new submittals or resubmittals mark the appropriate box; on resubmittals, insert transmittal number of last submission as well as the new submittal number.
3. The "Item No." will be the same "Item No." as indicated on ENG FORM 4288-R for each entry on this form.
4. Submittals requiring expeditious handling will be submitted on a separate form.
5. Separate transmittal form will be used for submittals under separate sections of the specifications.
6. A check shall be placed in the "Variation" column when a submittal is not in accordance with the plans and specifications--also, a written statement to that effect shall be included in the space provided for "Remarks".
7. Form is self-transmittal, letter of transmittal is not required.
8. When a sample of material or Manufacturer's Certificate of Compliance is transmitted, indicate "Sample" or "Certificate" in column c, Section I.
9. U.S. Army Corps of Engineers approving authority will assign action codes as indicated below in space provided in Section I, column i to each item submitted. In addition they will ensure enclosures are indicated and attached to the form prior to return to the contractor. The Contractor will assign action codes as indicated below in Section I, column g, to each item submitted.

### THE FOLLOWING ACTION CODES ARE GIVEN TO ITEMS SUBMITTED

A	--	Approved as submitted.	E	--	Disapproved (See attached).
B	--	Approved, except as noted on drawings.	F	--	Receipt acknowledged.
C	--	Approved, except as noted on drawings. Refer to attached sheet resubmission required.	FX	--	Receipt acknowledged, does not comply as noted with contract requirements.
D	--	Will be returned by separate correspondence.	G	--	Other ( <i>Specify</i> )

10. Approval of items does not relieve the contractor from complying with all the requirements of the contract plans and specifications.

*(Reverse of ENG Form 4025-R)*

## SUBMITTAL REGISTER

CONTRACT NO.
--------------

TITLE AND LOCATION

## EAST POINT DIKES

CONTRACTOR
------------

SPECIFICATION SECTION

02540

[illegible]

## SUBMITTAL REGISTER

CONTRACT NO.
--------------

TITLE AND LOCATION

## EAST POINT DIKES

CONTRACTOR
------------

SPECIFICATION SECTION

02961

[illegible]

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## SECTION 01451

### CONTRACTOR QUALITY CONTROL

#### PART 1 GENERAL

##### 1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

##### AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM D 3740	(1995) Agencies Engaged in the Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction
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ASTM E 329	(1995c) Agencies Engaged in the Testing and/or Inspection of Materials Used in Construction
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##### 1.2 PAYMENT

Separate payment will not be made for providing and maintaining an effective Quality Control program, and all costs associated therewith shall be included in the applicable unit prices or lump-sum prices contained in the Bidding Schedule.

#### PART 2 PRODUCTS (Not Applicable)

#### PART 3 EXECUTION

##### 3.1 GENERAL

The Contractor is responsible for quality control and shall establish and maintain an effective quality control system in compliance with the Contract Clause INSPECTION OF CONSTRUCTION. The quality control system shall consist of plans, procedures, and organization necessary to produce an end product which complies with the contract requirements. The system shall cover all construction operations, both on-site and off-site, and shall be keyed to the proposed construction sequence.

##### 3.2 QUALITY CONTROL PLAN

###### 3.2.1 General

The Contractor shall furnish for review by the Government, not later than 15 days after receipt of Notice of Award of the contract and at least 7 days prior to the Preconstruction Conference, the Contractor Quality Control (CQC) Plan proposed to implement the requirements of the Contract Clause INSPECTION OF CONSTRUCTION. The plan shall identify personnel, procedures, control, instructions, test, records, and forms to be used. Construction will be permitted to begin only after acceptance of the CQC Plan or acceptance of an interim plan applicable to the particular feature of work to be started. Work outside of the features of work included in an

accepted interim plan will not be permitted to begin until acceptance of a CQC Plan or another interim plan containing the additional features of work to be started.

### 3.2.2 Content of the CQC Plan

The CQC Plan shall include, as a minimum, the following to cover all construction operations, both on-site and off-site, including work by subcontractors, fabricators, suppliers, and purchasing agents:

a. A description of the quality control organization, including a chart showing lines of authority and acknowledgment that the CQC staff shall implement the three phase control system for all aspects of the work specified. The staff shall include a CQC system manager who shall report to the project manager or someone higher in the Contractor's organization. Project manager in this context shall mean the individual with responsibility for the overall management of the project including quality and production.

b. The name, qualifications (in resume format), duties, responsibilities, and authorities of each person assigned a CQC function.

c. A copy of the letter to the CQC System Manager signed by an authorized official of the firm which describes the responsibilities and delegates sufficient authorities to adequately perform the functions of the CQC System Manager, including authority to stop work which is not in compliance with the contract. The CQC System Manager shall issue letters of direction to all other various quality control representatives outlining duties, authorities, and responsibilities. Copies of these letters will also be furnished to the Government.

d. Procedures for laying out the work, verifying that the work has been constructed as required, and documenting the results of these quality control activities.

e. Procedures for scheduling, reviewing, certifying, and managing submittals, including those of subcontractors, off-site fabricators, suppliers, and purchasing agents. These procedures shall be in accordance with Section 01330 SUBMITTAL PROCEDURES.

f. Control, verification, and acceptance testing procedures for each specific test to include the test name, specification paragraph requiring test, feature of work to be tested, test frequency, and person responsible for each test. (Laboratory facilities will be approved.)

g. Procedures for tracking preparatory, initial, and follow-up control phases and control, verification, and acceptance tests including documentation.

h. Procedures for tracking construction deficiencies from identification through acceptable corrective action. These procedures will establish verification that identified deficiencies have been corrected.

i. Reporting procedures, including proposed reporting formats.

j. A list of the definable features of work. A definable feature of

work is a task which is separate and distinct from other tasks and has separate control requirements. It could be identified by different trades or disciplines, or it could be work by the same trade in a different environment. Although each section of the specifications may generally be considered as a definable feature of work, there are frequently more than one definable feature under a particular section. This list will be agreed upon during the coordination meeting.

### 3.2.3 Acceptance of Plan

Acceptance of the Contractor's plan is required prior to the start of construction. Acceptance is conditional and will be predicated on satisfactory performance during the construction. The Government reserves the right to require the Contractor to make changes in his CQC Plan and operations including removal of personnel, as necessary, to obtain the quality specified.

### 3.2.4 Notification of Changes

After acceptance of the CQC Plan, the Contractor shall notify the Contracting Officer in writing a minimum of seven calendar days prior to any proposed change. Proposed changes are subject to acceptance by the Contracting Officer.

## 3.3 COORDINATION MEETING

After the Preconstruction Conference, before start of construction, and prior to acceptance by the Government of the Contractor's Quality Control Plan, the Contractor shall meet with the Contracting Officer or Authorized Representative and discuss the Contractor's quality control system. The Contractor shall contact the Government to mutually schedule the Coordination Meeting at least 48 hours in advance of conducting the meeting. During the meeting, a mutual understanding of the system details shall be developed, including the forms for recording the CQC operations, control activities, testing, administration of the system for both on-site and off-site work, and the interrelationship of Contractor's Management and control with the Government's Quality Assurance. Minutes of the meeting shall be prepared by the Government and signed by both the Contractor and the Contracting Officer. The minutes shall become a part of the contract file. There may be occasions when subsequent conferences will be called by either party to reconfirm mutual understandings and/or address deficiencies in the CQC system or procedures which may require corrective action by the Contractor.

## 3.4 QUALITY CONTROL ORGANIZATION

The Contractor shall identify an individual within his organization at the worksite who shall be responsible for overall management of CQC and have the authority to act in all CQC matters for the Contractor. This CQC System Manager shall be on the site at all times during construction and will be employed by the Contractor, except as noted in the following. An alternate for the CQC System Manager will be identified in the plan to serve in the event of the System Manager's absence. Period of absence may not exceed 2 weeks at any one time, and not more than 30 workdays during a calendar year. The requirements for the alternate will be the same as for the designated CQC Manager.

### 3.4.1 CQC Organizational Staffing

The Contractor shall provide a CQC staff which shall be at the worksite at all times during progress, with complete authority to take any action necessary to ensure compliance with the contract.

#### 3.4.1.1 CQC Staff

Following are the minimum requirements for the CQC staff. These minimum requirements will not necessarily assure an adequate staff to meet the CQC requirements at all times during construction. The actual strength of the CQC staff may vary during any specific work period to cover the needs of the work period. When necessary for a proper CQC organization, the Contractor will add additional staff at no cost to the Government. This listing of minimum staff in no way relieves the Contractor of meeting the basic requirements of quality construction in accordance with contract requirements. All CQC staff members shall be subject to acceptance by the Contracting Officer.

#### 3.4.1.2 CQC System Manager

The CQC System Manager shall be an experienced construction person with a minimum of 5 years experience in related work. The CQC System Manager shall be assigned as System Manager but may have duties as project superintendent in addition to quality control. The CQC System Manager shall have successfully completed the course, "Construction Quality Management for Contractors". This course is periodically offered at Vicksburg, MS. (The POC for this course is Mr. James Waddle, CEMVK-CD-MQ, at (601) 631-5501.)

#### 3.4.1.3 Supplemental Personnel

A staff shall be maintained under the direction of the CQC System Manager to perform all CQC activities. The staff must be of sufficient size to ensure adequate CQC coverage of all work phases, work shifts, and work crews involved in the construction. These personnel may perform other duties, but must be fully qualified by experience and technical training to perform their assigned CQC responsibilities and must be allowed sufficient time to carry out these responsibilities. The CQC Plan will clearly state the duties and responsibilities of each staff member.

#### 3.4.2 Organizational Changes

The Contractor shall obtain Contracting Officer's acceptance before replacing any member of the CQC staff. Requests shall include the names, qualifications, duties, and responsibilities of each proposed replacement.

#### 3.5 SUBMITTALS

Submittals shall be made as specified in Section 01330 SUBMITTAL PROCEDURES. The Contractor shall be responsible for certifying that all submittals are in compliance with the contract requirements.

#### 3.6 CONTROL

The controls shall include at least three phases of control to be conducted by the CQC System Manager for all definable features of work, as follows:

##### 3.6.1 Preparatory Phase

This phase shall be performed prior to beginning each definable feature of



work, after all required plans/documents are approved/accepted, and after all copies are at the work site. This phase shall include:

- a. A review of each paragraph of applicable specifications.
- b. A review of the contract drawings.
- c. A check to assure that all materials and equipment have been tested, submitted, and approved.
- d. A check to assure that provisions have been made to provide required control inspection and testing.
- e. Examination of the work area to assure that all required preliminary work has been completed and is in compliance with the contract.
- f. A physical examination of required materials, equipment, and sample work to assure that they are on hand, conform to approved shop drawings or submitted data, and are properly stored.
- g. A review of the appropriate activity hazard analysis to assure safety requirements are met.
- h. Discussion of procedures for constructing the work including repetitive deficiencies. Document construction tolerances and workmanship standards for that phase of work.
- i. A check to ensure that the portion of the plan for the work to be performed has been accepted by the Contracting Officer.
- j. The Government shall be notified at least 48 hours in advance of beginning any of the required action of the preparatory phase. This phase shall include a meeting conducted by the CQC System Manager and attended by the superintendent, other CQC personnel (as applicable), and the foreman responsible for the definable feature. The results of the preparatory phase actions shall be documented by separate minutes prepared by the CQC System Manager and attached to the daily CQC report. The Contractor shall instruct applicable workers as to the acceptable level of workmanship required in order to meet contract specifications.

### 3.6.2 Initial Phase

This phase shall be accomplished at the beginning of a definable feature of work. The following shall be accomplished:

- a. A check of preliminary work to ensure that it is in compliance with contract requirements. Review minutes of the preparatory meeting.
- b. Verification of full contract compliance. Verify required control inspection and testing.
- c. Establish level of workmanship and verify that it meets minimum acceptable workmanship standards. Compare with sample panels is appropriate.
- d. Resolve all differences.

e. Check safety to include compliance with and upgrading of the safety plan and activity hazard analysis. Review the activity analysis with each worker.

f. The Government shall be notified at least 48 hours in advance of beginning the initial phase. Separate minutes of this phase shall be prepared by the CQC System Manager and attached to the daily CQC report. Exact location of initial phase shall be indicated for future reference and comparison with follow-up phases.

g. The initial phase should be repeated for each new crew to work on-site, or any time acceptable specified quality standards are not being met.

### 3.6.3 Follow-up Phase

Daily checks shall be performed to assure continuing compliance with contract requirements, including control testing, until completion of the particular feature of work. The checks shall be made a matter of record in the CQC documentation. Final follow-up checks shall be conducted and all deficiencies corrected prior to the start of additional features of work which may be affected by the deficient work. The Contractor shall not build upon or conceal non-conforming work.

### 3.6.4 Additional Preparatory and Initial Phases

As determined by the Government, additional preparatory and initial phases may be conducted on the same definable features of work if the quality of on-going work is unacceptable, if there are changes in the applicable CQC staff, on-site production supervision or work crew, if work on a definable feature is resumed after a substantial period of inactivity, or if other problems develop.

## 3.7 TESTS

### 3.7.1 Testing Procedure

The Contractor shall perform specified or required tests to verify that control measures are adequate to provide a product which conforms to contract requirements. Testing includes operation and acceptance tests when specified. The Contractor shall procure the services of a Corps of Engineers approved testing laboratory or establish an approved testing laboratory at the project site. The Contractor shall perform the following activities and record and provide the following data:

- a. Verify that testing procedures comply with contract requirements.
- b. Verify that facilities and testing equipment are available and comply with testing standards.
- c. Check test instrument calibration data against certified standards.
- d. Verify that recording forms and test identification control number system, including all of the test documentation requirements, have been prepared.
- e. Results of all tests taken, both passing and failing tests, will be recorded on the CQC report for the date taken. Specification paragraph reference, location where tests were taken, and the sequential control

number identifying the test will be given. If approved, actual test reports may be submitted later with a reference to the test number and date taken. An information copy of tests performed by an off-site or commercial test facility will be provided directly to the Contracting Officer. Failure to submit timely test reports as stated may result in nonpayment for related work performed and disapproval of the test facility for this contract.

### 3.7.2 Testing Laboratories

#### 3.7.2.1 Capability Check

The Government reserves the right to check laboratory equipment in the proposed laboratory for compliance with the standards set forth in the contract specifications and to check the laboratory technician's testing procedures and techniques. Laboratories utilized for testing soils, concrete, asphalt, and steel shall meet criteria detailed in ASTM D 3740 and ASTM E 329.

#### 3.7.2.2 Capability Recheck

If the selected laboratory fails the capability check, the Contractor will be assessed a charge of \$2,000 to reimburse the Government for each succeeding recheck of the laboratory or the checking of a subsequently selected laboratory. Such costs will be deducted from the contract amount due the Contractor.

### 3.7.3 On-Site Laboratory

The Government reserves the right to utilize the Contractor's control testing laboratory and equipment to make assurance tests and to check the Contractor's testing procedures, techniques, and test results at no additional cost to the Government.

### 3.7.4 Furnishing or Transportation of Samples for Testing

Costs incidental to the transportation of samples or materials will be borne by the Contractor. Samples of materials for test verification and acceptance testing by the Government shall be delivered to the Corps of Engineers Division Laboratory, f.o.b., at the following address:

Waterways Experiment Station  
3909 Halls Ferry Road  
Vicksburg, Mississippi 39180-6199

Coordination for each specific test, exact delivery location, and dates will be made through the Area Office.

## 3.8 COMPLETION INSPECTION

### 3.8.1 Punch List Inspection

Near the completion of all work or any increment thereof established by a completion time stated in Section 00800 SPECIAL CONTRACT REQUIREMENTS paragraph COMMENCEMENT, PROSECUTION, AND COMPLETION OF WORK, or stated elsewhere in the specifications, the CQC System Manager shall conduct an inspection of the work and develop a "punch list" of items which do not conform to the approved drawings and specifications. Such a list of deficiencies/uncompleted work shall be included in the CQC documentation,

as required by paragraph DOCUMENTATION below, and shall include the estimated date by which the deficiencies/uncompleted work shall be corrected/completed. The CQC System Manager or staff shall make a second inspection to ascertain that all deficiencies/uncompleted work have been corrected/completed. Once this is accomplished the Contractor shall notify the Government that the facility is ready for the Government "Pre-Final" inspection.

#### 3.8.2 Pre-Final Inspection

The Government will perform this inspection to verify that the facility is complete and ready to be occupied or put in use. A Government "Pre-Final Punch List" may be developed as a result of this inspection. Any items noted on the "Pre-Final" inspection shall be corrected in a timely manner.

These inspections and any deficiency corrections required by this paragraph will be accomplished within the time stated for completion of the entire work or any particular increment thereof if the project is divided into increments by separate completion dates.

#### 3.8.3 Final Acceptance Inspection

The Contractor's Quality Control System Manager, his Superintendent or other primary personnel, and the Contracting Officer's Representative shall be in attendance at this inspection. The customer and other Government personnel may also be in attendance. In the event of unavailability of the Contractor's representative, the Contracting Officer may elect to conduct the final acceptance inspection as scheduled. The Contracting Officer will formally schedule the final acceptance inspection based upon the results of the pre-final inspection. At least 14 days prior to the scheduled final acceptance inspection, the Contractor shall give the Contracting Officer a written notice of completion. The notice shall include the Contractor's assurance that all items previously identified to the Contractor as being unacceptable and all remaining work under the contract will be completed and acceptable by the date scheduled for the final acceptance inspection. Failure of the Contractor to have all contract work acceptably complete for this inspection will be cause for the Contracting Officer to bill the Contractor for the Government's additional inspection cost in accordance with the Contract Clause INSPECTION OF CONSTRUCTION.

#### 3.9 DOCUMENTATION

The Contractor shall maintain current records providing factual evidence that required quality control activities and tests have been performed. These records shall include the work of subcontractors and suppliers and shall be on an acceptable form that includes, as a minimum, the following information:

- a. Contractor/subcontractor and their area of responsibility.
- b. Operating plant/equipment with hours worked, idle, or down for repair.
- c. Work performed each day, giving location, description, and by whom.  
When Network Analysis (NAS) is used, identify each phase of work performed each day by NAS activity number.
- d. Test and control activities performed with results and references to specifications/drawings requirements. The control phase should be identified (Preparatory, Initial, Follow-up). List deficiencies noted

along with corrective action.

- e. Quantity of materials received at the site with statement as to acceptability, storage, and reference to specifications/drawings requirements.
- f. Submittals reviewed, with contract reference, by whom, and action taken.
- g. Off-site surveillance activities, including actions taken.
- h. Job safety evaluations stating what was checked, results, and instructions or corrective actions.
- i. Instructions given/received and conflicts in plans and/or specifications.
- j. Contractor's verification statement.

These records shall indicate a description of trades working on the project; the number of personnel working; weather conditions encountered; and any delays encountered. These records shall cover both conforming and deficient features and shall include a statement that equipment and materials incorporated in the work and workmanship comply with the contract. The original and one copy of these records in report form shall be furnished to the Government daily within 24 hours after the date(s) covered by the report, except that reports need not be submitted for days on which no work is performed. As a minimum, one report shall be prepared and submitted for every seven days of no work and on the last day of a no work period. All calendar days shall be accounted for throughout the life of the contract. The first report following a day of no work shall be for that day only. Reports shall be signed and dated by the CQC System Manager. The report from the CQC System Manager shall include copies of test reports and copies of reports prepared by all subordinate quality control personnel.

### 3.10 SAMPLE FORMS

Sample forms enclosed at the end of this section are:

- a. CONTRACTOR QUALITY CONTROL (CQC) REPORT FORM
- b. PREPARATORY PHASE CHECKLIST FORM
- c. INITIAL PHASE CHECKLIST FORM

### 3.11 NOTIFICATION OF NONCOMPLIANCE

The Contracting Officer will notify the Contractor of any detected noncompliance with the foregoing requirements. The Contractor shall take immediate corrective action after receipt of such notice. Such notice, when delivered to the Contractor at the worksite, shall be deemed sufficient for the purpose of notification. If the Contractor fails or refuses to comply promptly, the Contracting Officer may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No part of the time lost due to such stop orders shall be made the subject of claim for extension of time or for additional costs or damages by the Contractor.

--End of Section--

# CONTRACTOR QUALITY CONTROL (CQC) REPORT FORM

CONTRACTOR'S NAME

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Daily Report No.:\_\_\_\_\_

Date: \_\_\_\_\_

Contract No.: \_\_\_\_\_

Project Title & Location: \_\_\_\_\_

Weather: \_\_\_\_\_ Precipitation: \_\_\_\_\_ in. Temp.: \_\_\_\_\_ Min. \_\_\_\_\_ Max.

Percent Suitable for Scheduled Work: \_\_\_\_\_

1. Contract/Subcontractors and Area of Responsibility:

NUMBER:	TRADE	:	HOURS	:	EMPLOYER	:	LOCATION/DESCRIPTION WORK
1	Electrician	:	40	:	ABC Electric Co.	:	123 Main St, City, State
2	Plumber	:	30	:	XYZ Plumbing	:	456 Oak Ave, City, State
3	Painter	:	20	:	DEF Painting	:	789 Pine Rd, City, State
4	Carpenter	:	35	:	GHI Carpentry	:	101 Elm St, City, State
5	Mechanic	:	25	:	JKL Auto Repair	:	202 Maple Dr, City, State
6	Roofing	:	15	:	MNO Roofing	:	303 Birch Ln, City, State
7	Landscaping	:	10	:	PQR Lawn Care	:	404 Cedar Ct, City, State
8	HVAC	:	20	:	RST Climate Control	:	505 Walnut Way, City, State
9	Welding	:	30	:	UVW Fabrication	:	606 Spruce St, City, State
10	Ironworking	:	25	:	XYZ Steel Erection	:	707 Ash Ave, City, State

[illegible]

2. Operating Plant or Equipment. (Not hand tools)

PLANT/EQUIPMENT	DATE OF ARRIVAL/DEPARTURE	DATE OF SAFETY CHECK	HOURS USED	HOURS IDLE	HOURS REPAIR
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[illegible]

**CQC REPORT FORM (Cont'd)**

3. Work performed today: (Indicate location and description of work performed by prime and subcontractors by letter in table above.)

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4. Results of control activities: (Indicate whether P - Preparatory, I - Initial, or F - Follow-up Phase. When a P or I meeting is conducted, complete attachment 1-A or 1-B, respectively. When network analysis system is used, identify work by use of I-J numbers.)

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5. Test performed as required by plans and/or specifications:

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6. Materials received:

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**CQC REPORT FORM** (Cont'd)

7. Submittals Reviewed:

(a) Submittal No.	(b) Spec/Plan Reference	(c) By Whom	(d) Action
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

8. Offsite surveillance activities, including action taken:

_____
_____
_____
_____
_____
_____
_____

9. Job safety: (Report violations; Corrective instructions given; Corrective actions taken.)

_____
_____
_____
_____
_____
_____
_____

10. Remarks: (Instructions received or given. Conflict(s) in Plans and/or Specifications.)

_____
_____
_____
_____
_____
_____
_____

Contractor's Verification: On behalf of the Contractor, I certify this report is complete and correct, and all materials and equipment used and work performed during this reporting period are in compliance with the plans and specifications, to the best of my knowledge, except as noted above.

_____	_____
Authorized CQC System Manager	Date



**PREPARATORY PHASE CHECKLIST FORM**

Contract No.: \_\_\_\_\_ Date: \_\_\_\_\_

Definable Feature: \_\_\_\_\_ Spec Section: \_\_\_\_\_

Government Rep Notified \_\_\_\_\_ Hours in Advance Yes \_\_\_\_\_ No \_\_\_\_\_

**I. Personnel Present:**

	NAME	POSITION	COMPANY/GOVERNMENT
1.	_____	_____	_____
2.	_____	_____	_____
3.	_____	_____	_____
4.	_____	_____	_____
5.	_____	_____	_____
6.	_____	_____	_____
7.	_____	_____	_____

(List additional personnel on reverse side)

**II. Submittals**

1. Review submittals and submittal log 4288. Have all submittals been approved? Yes \_\_\_\_\_ No \_\_\_\_\_

If No, what items have not been submitted?

a. \_\_\_\_\_  
b. \_\_\_\_\_  
c. \_\_\_\_\_

2. Are all materials on hand? Yes \_\_\_\_\_ No \_\_\_\_\_

If No, what items are missing?

a. \_\_\_\_\_  
b. \_\_\_\_\_  
c. \_\_\_\_\_

3. Check approved submittals against delivered material. (This should be done as material arrives.)

Comments \_\_\_\_\_  
\_\_\_\_\_

**III. Material storage**

Are materials stored properly? Yes \_\_\_\_\_ No \_\_\_\_\_

If No, what action is taken? \_\_\_\_\_  
\_\_\_\_\_

**PREPARATORY PHASE CHECKLIST FORM (Cont'd)**

IV. Specifications

1. Review each paragraph of specifications.

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2. Discuss procedure for accomplishing the work.

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3. Clarify any differences.

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V. Preliminary Work

Ensure preliminary work is correct.

If not, what action is taken? \_\_\_\_\_  
\_\_\_\_\_

VI. Testing

1. Identify test to be performed, frequency, and by whom. \_\_\_\_\_

2. When required? \_\_\_\_\_

3. Where required? \_\_\_\_\_

4. Review Testing Plan. \_\_\_\_\_

5. Has test facilities been approved? \_\_\_\_\_

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VII. Safety

1. Review applicable portion of EM 385-1-1. \_\_\_\_\_

2. Activity Hazard Analysis approved? Yes \_\_\_\_\_ No \_\_\_\_\_

VIII. Corps of Engineers comments during meeting.

\_\_\_\_\_  
CQC Representative

**INITIAL PHASE CHECKLIST FORM**

Contract No.: \_\_\_\_\_ Date: \_\_\_\_\_

Definable Feature: \_\_\_\_\_

Government Rep Notified: \_\_\_\_\_ Hours in Advance Yes \_\_\_\_\_ No \_\_\_\_\_

**I. Personnel Present:**

	NAME	POSITION	COMPANY/GOVERNMENT
1.	_____	_____	_____
2.	_____	_____	_____
3.	_____	_____	_____
4.	_____	_____	_____
5.	_____	_____	_____
6.	_____	_____	_____

(List additional personnel on reverse side)

**II. Identify full compliance with procedures identified at preparatory phase. Coordinate plans, specifications, and submittals.**

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**III. Preliminary work. Ensure preliminary work is complete and correct. If not, what action is taken?** \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**IV. Establish Level of Workmanship.**

1. Where is work located? \_\_\_\_\_

2. Is a sample panel required? Yes \_\_\_\_\_ No \_\_\_\_\_

3. Will the initial work be considered as a sample? Yes \_\_\_\_\_ No \_\_\_\_\_  
(If yes, maintain in present condition as long as possible.)

**V. Resolve any Differences.**

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**INITIAL PHASE CHECKLIST FORM (Cont'd)**

VI. Check Safety.

Review job condition using EM 385-1-1 and job hazard analysis.

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_  
CQC Representative

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SECTION 02109

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-- End of Section Table of Contents --

## SECTION 02109

### CLEARING AND GRUBBING

#### PART 1 GENERAL

##### 1.1 GENERAL

The work covered by this section consists of furnishing all plant, labor, equipment, and materials; performing all operations necessary for the clearing and grubbing of the areas shown on the drawings or specified herein; and removing and disposing of all cleared and grubbed materials as specified herein.

##### 1.2 QUALITY CONTROL

###### 1.2.1 General

The Contractor shall establish and maintain quality control for clearing and grubbing operations to assure compliance with contract requirements and maintain records of his quality control for all construction operations including, but not necessarily limited to, the following:

###### a. Clearing

Station to station limits, transverse clearing limits from applicable centerline, percentage of area complete, method and location of disposal of cleared material, type of material.

###### b. Grubbing

Station to station limits, transverse grubbing limits from applicable centerline, percentage of area complete, method and location of disposal of grubbed material, type of material.

###### 1.2.2 Reporting

Three copies of these records, as well as the records of corrective action taken, shall be furnished the Government daily. The report shall be as prescribed in Section 01451 entitled CONTRACTOR QUALITY CONTROL.

##### 1.3 GENERAL REQUIREMENTS

All clearing and grubbing work as specified in this section shall be completed in advance of excavation operations, unless otherwise approved by the Contracting Officer.

##### 1.4 MEASUREMENT AND PAYMENT

###### 1.4.1 MEASUREMENT

Clearing and grubbing will be measured for payment by the job basis for the satisfactorily completed work.

###### 1.4.2 PAYMENT

Payment for clearing and grubbing will be made at the contract lump sum price for "Clearing and Grubbing," which price and payment shall include full compensation for furnishing all plant, labor, material, equipment, and all work necessary in the clearing and grubbing operations including disposal of cleared and grubbed material and all other debris.

## PART 2 PRODUCTS (Not Applicable)

## PART 3 EXECUTION

### 3.1 CLEARING

#### 3.1.1 General

Clearing, unless otherwise specified, shall consist of the removal of all trees, stumps, snags, brush, vegetation, and existing piling, to a height not to exceed 4 inches above the ground surface and the removal of drift, loose stone, fencing, abandoned structures, and other debris to the ground surface.

#### 3.1.2 Felling of Trees

Trees shall be felled in such a manner as to avoid damage to trees selected by the Contracting Officer to remain standing, existing facilities, and new construction, and shall be felled with due regard for the safety of employees and others.

#### 3.1.3 Merchantable Timber

Merchantable timber remaining within the areas to be cleared on or after the date of award of this contract may be disposed of as the Contractor sees fit as long as such merchantable timber is either removed from the rights-of-way indicated on the drawings or is satisfactorily disposed of in accordance with the provisions of paragraph DISPOSAL OF CLEARED AND GRUBBED MATERIAL AND OTHER DEBRIS.

#### 3.1.4 Areas to Be Cleared

Clearing shall be performed within the right-of-way limits of the dike stoneroots, stockpiles, all excavated material disposal areas landward of top bank, and areas required for operation of equipment.

### 3.2 GRUBBING

#### 3.2.1 General

Grubbing shall consist of the removal of all stumps, snags, brush, vegetation, roots, existing piling, and other objectionable matter to provide a bare earth surface. All stumps and debris exposed within the graded area shall be either cut off flush with the finished grade or removed. The use of explosives for removing stumps will not be permitted.

#### 3.2.2 Areas to Be Grubbed.

##### 3.2.2.1 General

Grubbing shall be performed within the right-of-way limits of the dike stoneroots, stockpiles, all excavated material disposal areas landward of top bank, and areas required for operation of equipment.

#### 3.2.2.2 Pipes and Drains

The Contractor shall inform the Contracting Officer of all pipes and drains not shown on the drawings which are encountered during grubbing. Such pipes and drains shall not be removed or disturbed until so directed by the Contracting Officer.

#### 3.2.2.3 Filling of Holes

All holes caused by grubbing operations and removal of pipes and drains shall be backfilled with suitable material in 12-inch layers to the elevation of the adjacent ground surface, and each layer compacted to a density at least equal to that of the adjoining undisturbed material.

### 3.3 DISPOSAL OF CLEARED AND GRUBBED MATERIAL AND OTHER DEBRIS

#### 3.3.1 General

Debris resulting from clearing and grubbing operations on this contract and all other debris may, at the Contractor's option, be disposed of by burning, burying, chipping, removing from the site. Areas selected for burning shall be cleared of all trees and debris, and materials to be burned shall be burned in a section centrally located within this area. The Contractor shall make a reasonable effort to utilize the last method to channel materials of value resulting from clearing operations into beneficial use.

#### 3.3.2 Burning

All pollution restrictions applicable to this project are as follows: Title 40, Code of Federal Regulation, Part 76, and Louisiana Air Pollution Regulations, Louisiana Air Control Commission, effective 17 July 1972, amended 21 November 1972 (Act 1964, No. 259, Title 40, Section 2201). Material may be burned within the contract area provided such burning does not cause the above standards to be violated. Burning operations shall be conducted so as to prevent damage to standing timber or other vegetation. The Contractor will be responsible for any damage to life and/or property resulting from fires that are started by his employees or as a result of his operations. The Contractor shall furnish at the site of burning operations adequate firefighting equipment to properly equip his personnel for fighting fires. Fires shall be guarded at all times and shall be under constant surveillance until they have been extinguished. Material that cannot be disposed of by burning may be disposed of by removal from the site, see paragraph REMOVAL FROM SITE OF WORK or as outlined in paragraphs BURYING and CHIPPING.

#### 3.3.3 Burying

If the Contractor elects to bury the debris, the area available for burying will be the landward clearing limit. No material shall be buried within 100 feet of the landward toe of the completed revetment. All material disposed of in such manner shall be covered with a minimum of 18 inches of earth.

#### 3.3.4 Chipping

All cut timber, down timber, dead timber, branches, and brush may be chipped. The chips shall be hauled to stockpiles as may be approved by the



Contracting Officer. The chips shall be deposited in these areas in piles or windrows. At the option of the Contracting Officer, the chips may be spread over worksite areas as a dust-preventative measure or may be used within the project areas as a mulch for plantings. However, such use will only be in areas where the wood chips will not be susceptible to being washed into streams by rainfall runoff.

### 3.3.5 Removal From Site of Work

The Contractor may elect to remove all debris resulting from contract operations from the site of the work. Such disposal shall comply with all applicable Federal, State, and local laws. The Contractor may, at his option, retain for his own use or disposal by sale or otherwise any such materials of value. The Government assumes no responsibility for the protection or safekeeping of any materials retained by the Contractor. Such materials shall be removed from the site of the work before the date of completion of the work under these specifications. If debris from clearing operations is placed on adjacent property, the Contractor shall obtain, without cost to the Government, additional rights-of-way for such purposes in accordance with the Section 01000 GENERAL CONTRACT REQUIREMENTS paragraph RIGHTS-OF-WAY. Such material shall be placed so as not to interfere with roads, drainage, or other improvements and in such a manner as to eliminate the possibility of its entering into channels, ditches, or streams. The Contracting Officer reserves the right to approve or disapprove the use of Contractor-furnished disposal areas located in woodlands or wetlands based on the location of the areas and a determination of the overall impact the proposed disposal will have on the environment.

-- End of Section --

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1.3.2 Reporting

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

3.1 STRUCTURAL EXCAVATION AND GRADING

3.2 Disposition of Material

-- End of Section Table of Contents --

## SECTION 02227

### STRUCTURAL EXCAVATION AND GRADING

#### PART 1 GENERAL

##### 1.1 MEASUREMENT AND PAYMENT

No separate measurement and payment or direct payment will be made for the cost of the work covered under this section and such work will be considered incidental to the contract.

##### 1.2 GENERAL

The work covered by this section consists of furnishing all plant, labor, materials, structural excavation and grading, complete, including disposition of material, all as specified herein and shown on the drawings for stonefill dikes.

##### 1.3 QUALITY CONTROL

###### 1.3.1 General

The Contractor shall establish and maintain quality control for excavation and grading operations to assure compliance with contract specifications and maintain records of his quality control for all construction operations including, but not limited to, the following:

- a. Excavation and Grading. Check grade and slope for compliance with design sections, and disposition of excavated material.

###### 1.3.2 Reporting

Three copies of these records, as well as the records of corrective action taken, shall be furnished the Government daily. The report shall be as prescribed in Section 01451 entitled CONTRACTOR QUALITY CONTROL.

#### PART 2 PRODUCTS (Not Applicable)

#### PART 3 EXECUTION

##### 3.1 STRUCTURAL EXCAVATION AND GRADING

Where indicated on the drawing, the natural ground at the proposed structure site shall be excavated and graded to provide for complete placement of stone. No interim excavation slopes will be steeper than the design slopes. During excavation for the stoneroots, logs, stumps, snags, and other debris are to be expected and, if encountered, shall not be considered as being materially different within the purview of Contract Clause entitled, DIFFERING SITE CONDITIONS, of the contract. Finished slopes on which stone is to be placed shall have a tolerance of not more than plus or minus 6 inches from the grade indicated on the drawing and shall present a neat, smooth surface free from all obstructions. Placement of stone shall follow the grading operations as soon as practicable. Surfaces on which stone is to be placed that are excavated below the tolerance specified above shall be refilled with approved material to the

required elevations to secure a foundation equal to the undamaged slope without additional cost to the Government.

### 3.2 Disposition of Material

All material removed in the excavation and grading operations, and not used for backfill in the stoneroots shall be disposed of landward of the top of graded bank within the rights-of-way shown on the drawings. Excavation for stone placement in the dike can be disposed of in the channel.

-- End of Section --

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SECTION 02272

STONEFILL DIKES, STONEROOTS, AND BANKHEADS

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1.2.1.3 Stone Stockpile

1.3 PAYMENT

1.3.1 Stone

1.3.2 Stone Stockpile

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3.3.1 General

3.3.2 Reporting

-- End of Section Table of Contents --

## SECTION 02272

### STONEFILL DIKES, STONEROOTS, AND BANKHEADS

#### PART 1 GENERAL

##### 1.1 GENERAL

The work covered by this section consists of furnishing all plant, labor, and stone and performing all work necessary in placing the stone for stonefill dikes, stoneroots, and bankheads complete, all as specified herein and shown on the drawings. Stone shall be Graded Stone "B" and shall conform to the requirements specified in Section 02540 MATERIALS paragraph STONE.

##### 1.2 MEASUREMENT

###### 1.2.1 Stone

Stone will be measured for payment by the ton (2,000 pounds). Stone placement direct from barge will be measured for payment in presence of a Government inspector, by weight determined by barge displacement and stone placement by other means shall be weighed on approved scales at the worksite provided, maintained, and operated by and at the expense of the Contractor. Quantities will be completed to the nearest whole ton.

###### 1.2.1.1 Delivery by Barge

If delivered by barge, the Contracting Officer's Representative will measure stone for payment by weight determined by barge displacement. Not less than 10 days prior to unloading stone from any barge for which a displacement table has not previously been furnished and approved. The Contractor shall furnish the Contracting Officer a barge displacement table. The Contractor shall furnish with the barge displacement tables a drawing or sketch of each barge, dimensioned in sufficient detail to permit checking of the tables. The drawings shall show, as a minimum, the length, width, and depth of the barge and dimensions of the rake or rakes. Each such table shall have its accuracy certified by a person or firm, other than the Contractor, customarily performing this service and who has been approved by the Contracting Officer. Each table submitted shall show the name and/or number of the barge, the barge dimensions, the barge owner, the name of the fabricator, certification, and date of certification of the person or firm preparing the table. All new or modified barges shall be field checked for current dimensions by the Contractor, in the presence of the Contracting Officer's Representative. Each table submitted shall contain in parallel columns, the freeboard of the barge in feet and tenths from zero to the full depth of the barge, and the corresponding gross displacement to the nearest ton. Each barge shall be suitably marked with two displacement gaging lines along each side of the barge. Each gaging line shall be painted perpendicular to the edge of the barge and be no less than 4 inches wide and 1 foot long, on both the deck and side of the barge.

Barges with rakes shall have the displacement gaging lines placed at each corner of the box section between the rakes. If a barge has a box end or ends, the gaging lines shall be placed approximately four feet from the box end. The freeboard will be measured at the four gaging locations and the displacement determined by the use of the "CELMV Standard Barge Tables"

from the average of these measurements. The displacement shall be determined before and after the barge is unloaded and the difference between these values shall be the quantity delivered.

#### 1.2.1.2 Delivery by Truck or Rail

When stone, not handled by barge, is delivered by truck from a quarry or railroad siding, it shall be weighed on approved scales before being placed in the work. Scales shall be of sufficient length to permit simultaneous weighing of all axle loads and shall be inspected, tested, and sealed as directed by the Contracting Officer to assure an accuracy within 0.5 percent throughout the range of scales. Scales will be checked and certified before stone hauling commences and rechecked and recertified whenever variances are suspected and at points when scales have weighed 50,000 ton increments. The Contractor shall furnish the scales and shall weigh the stone in the presence of a Contracting Officer's Representative, who will certify to the correctness thereof. Weight certificates furnished by a public weighmaster will be acceptable in lieu of such procedures when authorized by the Contracting Officer. Quantities will be computed to the nearest whole ton. Unless otherwise approved, public weighmaster scales shall be located within 10 miles of the site of the work.

#### 1.2.1.3 Stone Stockpile

If the Contractor elects to stockpile stone on the jobsite, he shall be required to weigh the stone immediately before placement in the work with such deducts as the Contracting Officer may deem reasonable due to mixture of soils or dirt as a result of such operations. Scale certification as to accuracy and other related requirements will be in accordance with paragraph DELIVERY BY TRUCK OR RAIL.

### 1.3 PAYMENT

#### 1.3.1 Stone

Payment for stone satisfactorily placed in the stonefill dikes, stoneroots, and bankheads will be made at the contract unit price for "Graded Stone B", which price and payment shall constitute full compensation for furnishing all plant, labor, and stone and performing all work necessary in placing the stone in the stonefill dikes, stoneroots, and bankheads as specified on the drawings. "Excavation and Grading" shall be considered incidental to the contract with no additional compensation being allowed.

#### 1.3.2 Stone Stockpile

No separate payment will be made for the stockpiling of stone, and all cost in connection therewith shall be included in the contract unit price for Graded Stone "B".

### PART 2 PRODUCTS (Not Applicable)

### PART 3 EXECUTION

#### 3.1 EXCAVATION AND GRADING

Where required for bank protection, the existing ground at the proposed structures shall be excavated and graded to provide a foundation for the complete placement of stone. Excavation and grading shall be in accordance with Section 0227 STRUCTURAL EXCAVATION AND GRADING paragraph STRUCTURAL

## EXCAVATION AND GRADING.

### 3.2 STONEFILL DIKES, STONEROOTS, AND BANKHEADS

#### 3.2.1 Construction Method

The stonefill dikes shall be constructed of Graded Stone "B" to the lines, grades, and sections shown or as noted on the drawings. Construction of the stonefill dikes shall commence at the landward end and continue progressively to the riverward end. The initial work shall consist of a stone blanket approximately 2 feet thick and extending over the full width and length of the dike. If stone is placed by land based equipment, this stone blanket is not required. The remaining stone required to complete the underwater portion of the dike shall be placed from the shoreward to the riverward end of the dike in approximately uniform layers not exceeding 5 feet in thickness and extending over the full width and length of the dike. The portion of the dike above the water may be placed in one lift.

#### 3.2.2 Placement

The stone shall be placed in the dikes by skip or clamshell, cast off barges by hand or machine, or by other methods approved by the Contracting Officer. The larger stone shall be well distributed throughout the mass, and the finished dike shall be free from pockets of small stone and clusters of larger stone. A tolerance of plus or minus 1 foot will be allowed on the prescribed crown elevation and width. The side slopes shall be determined by the natural angle of repose of the stone, varying from 1V on 1.25H to 1V on 1.5H.

#### 3.2.3 Stoneroots

The stoneroots shall consist of Graded Stone "B" placed in the excavated trench as specified in paragraph PLACEMENT and as shown on the drawings.

#### 3.2.4 Bankheads

Paving for bank protection shall consist of Graded Stone "B" placed on the graded slope to protect the bank to the elevations indicated on the drawings. The method of placement of bank paving materials shall be such as to provide a minimum of segregation of size in the in-place materials. The paving shall be graded uniformly from the bottom to the top of the paved slope.

### 3.3 QUALITY CONTROL

#### 3.3.1 General

The Contractor shall establish and maintain quality control for stone construction operations to assure compliance with contract specifications and maintain records of his quality control for all construction operations including, but not limited to, the following:

- a. Stonefill Dikes, Stoneroots, and Bankheads. Check grade, slope, and placement of stone for compliance with design sections and specifications.

#### 3.3.2 Reporting

Three copies of these records and tests, as well as the records of



corrective action taken, shall be furnished the Government daily. The report shall be as prescribed in Section 01451 entitled CONTRACTOR QUALITY CONTROL.

-- End of Section --

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PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

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3.1.1 General

3.1.2 Construction Method

3.1.3 Placement

3.2 Debris Removal

-- End of Section Table of Contents --

## SECTION 02495

### REINFORCEMENT

#### PART 1 GENERAL

##### 1.1 GENERAL REQUIREMENTS

The work covered by this section consists of furnishing all plant, labor and stone, and performing all work necessary in placing the stone for the revetment reinforcement, complete, all as specified herein and shown on the drawings. Stone shall be Graded Stone "B" and shall conform to the requirements specified in Section 02540 MATERIALS.

##### 1.2 MEASUREMENT

###### 1.2.1 Stone

The unit of measurement for stone will be the ton (2,000 pounds) of stone satisfactorily placed in the work. Actual measurements will be in accordance with Section 02272 Stonefill Dikes and Stoneroots paragraph Measurement.

###### 1.2.2 Payment

###### a. Stone

Payment for stone satisfactorily placed in constructing the revetment reinforcement will be made at the contract unit price for Graded Stone "B", which price and payment shall constitute full compensation for furnishing all plant, labor, and performing all work necessary in placing the stone in constructing the reinforcement as specified herein or shown on the drawings.

###### b. Stone Stockpile

No separate payment will be made for the stockpiling of stone, and all cost in connection therewith shall be included in the contract unit price for Graded Stone "B".

#### PART 2 PRODUCTS (Not Applicable)

#### PART 3 EXECUTION

##### 3.1 REINFORCEMENT

###### 3.1.1 General

The work covered by this section consists of furnishing all plant, labor and stone, and performing all work necessary in placing the stone for the revetment reinforcement, complete, all as specified herein and shown on the drawings. Stone shall be Graded Stone "B" and shall conform to the requirements specified

###### 3.1.2 Construction Method

The reinforcement shall be constructed of Graded Stone "B" within the limits shown or as noted on the drawings. Construction shall commence at the upstream end and continue progressively to the downstream end. That portion of the revetment reinforcement above the water may be placed in one lift with close compact paving with a required thickness of 2 feet. Where reinforcement is required to be placed below the water surface, the stone shall be dropped from barges or placed by other approved methods to provide a section at 7 tons per linear foot. Prior to the start of work the Contractor shall submit, for approval, his proposed method or methods for placing stone underwater.

#### 3.1.3 Placement

The stone shall be placed in the reinforcement by skip, clamshell, cast off barges by hand or machine, or by other methods approved by the Contracting Officer. The larger stone shall be well distributed throughout the mass and the finished revetment shall be free from pockets of small stone and clusters of larger stone. Placement shall be as shown on Typical Sections.

#### 3.2 Debris Removal

Debris shall be removed from the structures to allow for the placement of the stone in the reinforcement. The Contracting Officer's Representative will determine the location and amount of debris to be removed. There will be no measurement and payment for the debris removal and all costs will be considered incidental to the contract. The Contracting Officer Representative shall determine the amount of debris to be disposed of and its location.

-- End of Section --

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## SECTION 02540

### MATERIALS

#### PART 1 GENERAL

##### 1.1 General

This section sets forth the requirements and applicable specifications governing the materials which are to be incorporated into the work.

##### 1.2 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

#### AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM C 127	(1988; R 1993) Specific Gravity and Absorption of Coarse Aggregate
------------	--

ASTM C 295	(1990) Petrographic Examination of Aggregate for Concrete
------------	---

#### CORPS OF ENGINEERS (COE)

COE CRD-C 144	(1973) Testing Stone for Resistance to Freezing and Thawing
---------------	---

COE CRD-C 169	(1993) Resistance of Rock to Wetting and Drying
---------------	---

##### 1.3 SUBMITTALS

Government approval is required for submittals with a "GA" designation; submittals having an "FIO" designation are for information only. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

#### SD-09 Reports

Gradation Test; FIO. Evaluation Tests; FIO.

The gradation tests shall be submitted using the GRADATION TEST DATA SHEET enclosed at end of this section.

Quality test on the stone in accordance with paragraph EVALUATION TESTING shall be the responsibility of the Contractor and submitted for approval prior to delivery of such material to the worksite.

#### SD-13 Certificates

Stone; FIO. Laboratory; FIO.

Certificates of compliance attesting that the materials meet specification requirements shall be submitted to the Contracting Officer.

A copy of the testing laboratory's certification and inspection report shall be submitted along with actions taken to correct deficiencies.

#### 1.4 NOT USED

#### 1.5 GOVERNMENT TESTING AND STUDIES

##### 1.5.1 Stone

##### 1.5.1.1 General

All stone shall be durable material as approved by the Contracting Officer.

In case an unlisted source is to be used, the Contractor shall show that an adequate quantity of material is available and provide quality test data. Stone shall be of a suitable quality to ensure permanence in the structure and in the climate in which it is to be used. It shall be free from cracks, seams and other defects that would tend unduly to increase its deterioration from natural causes. The stone shall be clean and reasonably free from earth and dust and shall contain no refuse.

##### 1.5.1.2 Sources

Stone shall be furnished from any of the sources listed at the end of this section, or at the option of the Contractor may be furnished from any other source designated by the Contractor and accepted by the Contracting Officer, subject to the conditions stated herein. If the Contractor proposes to furnish stone from a source not currently listed in these specifications, the Government will conduct a quarry investigation and evaluate the quality test data provided by the contractor to determine whether acceptable stone can be produced from the proposed source. Satisfactory service records on other work may be acceptable. In order for stone to be acceptable on the basis of service records, stone of a similar size must have been placed in a similar thickness and exposed to weathering under similar conditions as are anticipated for this contract, and must have satisfactorily withstood such weathering for a minimum of 20 years

a. List of Sources. On the basis of information and data available to the Contracting Officer, stone meeting the quality requirements of these specifications has been produced from the sources listed at the end of this section.

b. Selection of Source. The Contractor shall designate in writing only one source or one combination of sources from which he proposes to furnish stone. If the Contractor proposes to furnish stone from a source not listed, he may designate only a single unlisted source for stone and he shall notify the Contracting Officer at least 60 workdays before the stone leaves the quarry. It is the Contractor's responsibility to determine that the stone source or combination of sources selected is capable of supplying the quantities and gradation needed and at the rate needed to maintain the scheduled progress of the work. If a source for stone so designated by the Contractor is not accepted for use by the Contracting Officer, the Contractor may not propose other sources but shall furnish the stone from a source listed at the end of this section at no additional cost to the Government.

c. Acceptance of Materials. Acceptance of a source of stone is not to

be construed as acceptance of all material from that source. The right is reserved to reject materials from certain localized areas, zones, strata, or channels, when such materials are unsuitable for stone as determined by the Contracting Officer. Materials produced from a listed or unlisted source shall meet all the requirements herein.

#### 1.5.1.3 Additional Testing

The Contracting Officer may direct additional testing of bedding sand, bedding stone, and stone furnished to the site in the presence of the Contracting Officer's Representative, if the material appears, by visual inspection, to be of questionable gradation. The Contracting Officer may direct this jobsite testing under Contract Clause entitled INSPECTION OF CONSTRUCTION.

### PART 2 PRODUCTS

#### 2.1 STONE

##### 2.1.1 General

Only quarried stone shall be used. Stone quality shall be specified in paragraph GOVERNMENT TESTING AND STUDIES, subparagraph STONE. A maximum of 10 percent flat and elongated pieces will be acceptable. A flat and elongated piece of stone is defined as a stone with either the width or thickness of the piece being less than one-third of the length.

##### 2.1.2 Graded Stone

###### 2.1.2.1 Graded Stone "B"

Graded Stone "B" shall meet the gradation requirements shown in Plate I at the end of this section.

###### 2.1.2.2 Not Used

##### 2.1.3 Evaluation Testing

If the Contractor proposes to furnish stone from an unlisted source, the Contractor shall have evaluation tests performed on stone samples collected from the proposed source. The tests to which the stone shall be subjected include petrographic examination ASTM C 295, specific gravity, unit weight, and absorption ASTM C 127, resistance of stone to freezing and thawing COE CRD-C 144, and if sandstone is used, resistance to wetting and drying in accordance with COE CRD-C 169.

a. Unit Weight and/or Absorption. Stone shall weigh more than 155 lbs/cubic foot. The stone shall have an absorption less than 2 percent unless other tests and service records show that the stone is satisfactory. The method of test for unit weight and absorption will be ASTM C 127, except the unit weight will be calculated in accordance with Note 5 using bulk specific gravity, saturated surface dry.

b. Resistance to Freezing and Thawing. Stone when tested in accordance with COE CRD-C 144 shall have a loss of less than 5 percent.

c. Resistance to Wetting and Drying. This test shall only be required to be performed on sandstone samples. When tested in accordance with COE CRD-C 169 (35 cycles), there shall be a loss of less than one



percent.

d. Samples. Samples of stone from a source not listed at the end of this section shall be taken by a representative of the quarry under the supervision of the Contracting Officer for testing and acceptance prior to delivery of any stone from this source to the site of the work. Samples shall consist of at least three pieces of stone, roughly cubical in shape and weighing not less than 75 pounds each. The samples shall be shipped at the Contractor's expense to a laboratory certified by the Government to perform the required tests.

e. Tests. The tests shall be conducted by the Contractor in accordance with applicable Corps of Engineers methods of tests given in the Handbook for Concrete and Cement, and shall be performed at a laboratory certified by the Government. The cost of testing shall be borne by the Contractor.

#### 2.1.4 Gradation Test

The Contractor shall perform a gradation test on stone at the quarry in accordance with paragraph STANDARD TEST METHOD FOR GRADATION OF RIPRAP AND GRADED STONE. The sample shall be taken by the Contractor in the presence of the Contracting Officer's Representative. The Contractor shall notify the Contracting Officer not less than 3 days in advance of each test. In the event of nonavailability of a Government representative; the Contractor shall perform the tests and certify to the Contracting Officer that the stone shipped complies with the specifications. At least one gradation test shall be performed for each 50,000 tons of Graded Stone "B" of each size of stone placed, but not less than one test shall be performed. The gradation tests shall be reported using forms GRADATION TEST DATA SHEET and ENG FORM 4794-R, attached at the end of this section. The Contractor shall designate on the test form that portion (in tons) of the lot tested which is applicable to this contract. Any deviation from the reported tonnage shall be corrected and recorded on a revised GRADATION TEST DATA SHEET. The sample shall consist of not less than 25 tons of Graded "B", and shall be collected in a random manner which will provide a sample which accurately reflects the actual gradation arriving at the jobsite. Gradation test shall be made for each gradation specified. Failure of the test on the initial sample and on an additional sample will be considered cause for rejection of the quarry and/or quarrying process, and all stone represented by the failed tests shall be set aside and not incorporated into the work. Any additional tests required because of the failure of an initial test sample will not be considered as one of the other required tests. If collected by the truckload, each truckload shall be representative of the gradation requirements. The Contracting Officer may direct additional testing of the stone at the project site if the stone appears by visual inspection, to be out of gradation. The Contracting Officer may direct this testing under the Contract Clause INSPECTION OF CONSTRUCTION. The Contractor shall provide all necessary screens, scales, and other equipment, the operating personnel, and shall grade the sample. Certification and test results shall represent stone shipped from the quarry. Certification and test results must be received by the Government representative at the jobsite before the stone is used in the work.

#### 2.1.5 Stone Stockpile

Temporary storage of stone at the worksite will be allowed, provided the stream-side toe of the stone be no closer than 100 linear feet from the closest edge of the stream's top bank. The Contractor's jobsite stockpile

shall be maximum of 12 feet high and formed by a series of layers of truckload dumps, where the rock essentially remains where it is placed. Subsequent layers shall be started 10 feet from the edge of the previous layer so that the rock will not roll down the edges of the previous layers.

The first layer shall be a maximum of 6 feet high. Any stone which has become contaminated with soil, dirt, or refuse after being stockpiled, will not be put into the work unless the contaminating material has been removed from the stone prior to placement. In areas where stone is stockpiled for placement, the area shall have excess rock removed prior to completion of work. All rock and spalls greater than 3 inches in diameter shall be removed. Where rocks may have become buried due to soft ground or operation of the equipment, the rock shall be disposed of as directed. After the rock has been removed, the storage area shall be graded, dressed, and filled to return the ground surface as near as practical to the condition that existed prior to construction.

Any Contractor furnished stone stockpile area(s) shall be approved by the Contracting Officer prior to use. Contractor furnished stone stockpile area(s) shall be in accordance with the guidelines set forth by the paragraph above. All restoration cost of Contractor furnished stone stockpile area(s) shall be the sole responsibility of the Contractor.

## 2.2 NOT USED

## PART 3 EXECUTION

### 3.1 QUALITY CONTROL

#### 3.1.1 General

The Contractor shall inspect all materials before they are incorporated into the work for compliance with contract requirements, and any material found to be defective will be rejected. All information pertaining to the inspection shall be recorded and included in quality control reports furnished the Contracting Officer. The inspections shall include, but will not be limited to, the following:

- a. Submission of stone samples for quality testing, if from other than listed sources.
- b. Cleanliness and gradation of stone
- c. Quality of stone delivered and placed each day
- d. Stone placement

#### 3.1.2 Reporting

Three copies of these records, as well as the records of corrective action taken, shall be furnished to the Government daily when working under this section. Format of the report shall be as required in Section 01451 CONTRACTOR QUALITY CONTROL.

### 3.2 TESTS

#### 3.2.1 General

The Contractor shall perform gradation tests to assure compliance with the contract requirements and shall maintain detailed records.

### 3.2.2 Reporting

Reporting shall be in accordance with paragraph GRADATION TEST

### 3.2.3 Standard Test Method for Gradation of Riprap and Graded Stone

- a. Select a representative sample (Note No. 1), weigh and dump on hard stand.
- b. Select specific sizes (see example) on which to run "individual weight larger than" test. (See Note No. 2). Procedure is similar to the standard aggregate gradation test for "individual weight retained".
- c. Determine the largest size stone in the sample. (100 percent size)
- d. Separate by "size larger than" the selected weights, starting with the larger sizes. Use reference stones, with identified weights, for visual comparison in separating the obviously "larger than" stones. Stones that appear close to the specific weight must be individually weighed to determine size grouping. Weight each size group, either individually or cumulatively.
- e. Paragraph d above will result in "individual weight retained" figures. Calculate individual percent retained (heavier than) cumulative percent retained and cumulative percent passing (lighter than). Plot percent passing, along with the specification curve on ENG Form 4794-R.

**NOTE NO. 1:** Sample Selection: The most important part of the test and the least precise is the selection of a representative sample. No "standard" can be devised; larger quarry run stone is best sampled at the shot or stockpile by given direction to the loader; small graded stone is best sampled by random selection from the transporting vehicles. If possible, all parties should take part in the sample selection, and agree before the sample is run, that the sample is representative.

**NOTE NO. 2:** Selection of Size for Separation: It is quite possible and accurate to run a gradation using any convenient sizes for the separation, without reference to the specifications. After the test is plotted on a curve, then the gradation limits may be plotted. Overlapping gradations with this method are no problem. It is usually more convenient, however, to select points from the gradation limits, such as the minimum 50 percent size, the minimum 15 percent size, and one or two others, as separation points.

F O R

E X A M P L E

O N L Y

EXAMPLE GRADATION  
SPECIFICATIONS

STONE WEIGHT IN LBS.	PERCENT LIGHTER BY WEIGHT
400-160	100
160-80	50
80-30	15

EXAMPLE WORKSHEET

STONE SIZE	INDIVIDUAL	INDIVIDUAL	CUMULATIVE PERCENT	
LBS.	WT. RETAINED	PERCENT RETAINED	RETAINED	PASSING
400	0	0	0	100
160	9,600	30	30	70
80	11,200	35	65	35
30	8,000	25	90	10
-30	3,200	10	100	-
	<hr/>			
TOTAL	32,000 lbs.			

NOTE: Largest stone 251 lbs.

--End of Section--

## STONE SOURCES

LAT/LONG (TESTED)	QUARRY LOCATION, ADDRESS AND TELEPHONE NUMBER	MAIN OFFICE ADDRESS AND TELEPHONE NUMBER
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### ARKANSAS

36/91 (1996)	Verkler Quarry is located approx. 4 miles north of Black Rock, AR off U.S. Hwy 63.	Vulcan Materials Co. Black Rock Quarries P.O. Box 276 Black Rock, AR 72415 (870)878-6245
34/92 (1995)	Big Rock Quarry is located off AR Hwy 367, 0.5 mile north of junction with 65th Street, Little Rock, AR. (501) 568-1200	Carder/Souter Inc. P.O. Box 876 Conway, AR 72032 (501) 354-0137
34/92 (1997)	Granite Mountain Q #1 is located on side of Hwy 65 and just north of Dixie Road.	McGeorge Corporation P.O. Box 138 Sweet Home, AR 72164 (501) 490-1535
36/91 (1995)	Valley Stone Quarry is located 4.5 miles northwest of Black Rock, AR off U.S. Hwy 63	Meridian Aggregates Co. P.O. Box 260 Black Rock, AR 72415 (870) 878-6201
34/94 (1995)	Hatton Quarry is located 1 mile east of Hatton, AR	Meridian Aggregates Co. P.O. Box 1325 Mena, AR 71953 (870) 385-2301
34/95 (1996)	River Mountain Quarry is located approx. 5 miles northwest of Delaware, AR, at AR River Mile 218.5.	Pine Bluff Sand and Gravel P.O. Box 7008 Pine Bluff, AR 71611-7008 (870) 534-7120

### KENTUCKY

37/88 (1996)	Three Rivers Quarry is located 7 miles northeast of Smithland, KY, off Hwy 60 (Cumberland Road)	Martin Marietta Aggregates 830 Three Rivers Quarry Rd. Smithland, KY 42081 (502) 928-2141
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# STONE SOURCES

(Continued)

LAT/LONG (TESTED)	QUARRY LOCATION, ADDRESS AND TELEPHONE NUMBER	MAIN OFFICE ADDRESS AND TELEPHONE NUMBER
----------------------	--	---

## KENTUCKY - Cont.

37/88 (1996)	Gilbertsville Quarry is located on U.S. Hwy 62 "Between the Dams" Lake City, KY.	Vulcan Materials Co. Reed/BRT Operations 947 U.S. Hwy 62 Grand Rivers, KY 42045 (502) 362-4265
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## MISSOURI

38/90 (1997)	Old Menefee Quarry is located 4 miles north of Bloomsdale, MO on I-55, take exit for State Rds. DD and OO and turn east and go 1 mile to Hwy 61 and continue straight thru intersection on Brickeys Rd to quarry.	Brickeys Stone Co. P.O. Box 220 13588 Brickeys Rd. Bloomsdale, MO 63627 (573) 483-3475
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37/89 (1995)	Gray's Point Quarry is located at MRM 46.2, above the mouth of the Ohio River.	Tower Rock Stone Co. P.O. Box 50 Columbia, IL 62236 (618) 281-4106
-----------------	--	---

Tower Rock Stone Co.  
P.O. Box 4248  
Scott City, MO 63780  
(573) 264-3800

38/90 (1995)	Bussen Quarry is located 5 miles north of St. Genevieve, MO, MRM 127.6, above the mouth of the Ohio River.	Tower Rock Stone Co. P.O. Box 50 Columbia, IL 62236 (618) 281-4106
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Tower Rock Stone Co.  
P.O. Box 111  
St. Genevieve, MO 63670  
(573) 883-7415

# G R A D A T I O N      T E S T      D A T A      S H E E T

Quarry \_\_\_\_\_ Type of Stone Tested \_\_\_\_\_

Date of Test \_\_\_\_\_ Testing Rate \_\_\_\_\_

## T E S T      R E P R E S E N T S

Contract No. \_\_\_\_\_

District \_\_\_\_\_

Tons \_\_\_\_\_

TOTAL		

## G R A D A T I O N

Stone Size (lbs)	Weight Retained	Individual % Retained	Cumulative % Ret.    % Pass	Specification % Finer by wt
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Total Wt					

Remarks: \_\_\_\_\_

I certify that the above stone sample is representative of the total tonnage covered by this test report.

Contractor Representative \_\_\_\_\_

Government Representative \_\_\_\_\_

LMV FORM 602-R

-- End of Section --



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-- End of Section Table of Contents --

## SECTION 02961

### ESTABLISHMENT OF TURF

#### PART 1 GENERAL

##### 1.1 GENERAL REQUIREMENTS

The work covered by this section of the specifications consists of furnishing all plant, labor, equipment, and materials and performing all operations in connection with fertilizing, seeding, and mulching, complete in strict accordance with this section of the specifications.

##### 1.2 AREAS TO BE TURFED

Areas to be turfed shall include all stoneroots, stone stockpile areas, and any other disturbed areas as directed by the Contracting Officer.

##### 1.3 SUBMITTALS

Government approval is required for submittals with a "GA" designation; submittals having an "FIO" designation are for information only. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-13 Certificates

Fertilizer; FIO. Seeding; FIO.

Certificates of compliance attesting that the materials meet specification requirements shall be submitted to the Contracting Officer.

##### 1.4 MEASUREMENT AND PAYMENT

###### 1.4.1 Measurement

Turfing will be measured for payment by the job basis for the satisfactorily completed work.

###### 1.4.2 Payment

Payment for tilling, fertilizing, seeding, and mulching and other incidental work, except disposal of debris, will be made at the contract lump sum price for "Turfing", which price and payment shall constitute full compensation for furnishing all labor, plant, materials and equipment, and performing the work in accordance with these specifications. Disposal of debris shall be included in the contract lump sum price for "Clearing and Grubbing."

#### PART 2 PRODUCTS

##### 2.1 SEED

Seed shall be labeled in accordance with the latest U.S. Department of Agriculture Rules and Regulations under the Federal Seed Act. Seed shall be furnished in sealed standard containers unless exception is granted in

writing by the Contracting Officer. Seed which has become wet, moldy, or otherwise damaged in transit or in storage will not be acceptable.

## 2.2 FERTILIZER

Fertilizer used shall be standard commercial fertilizer supplying a minimum of 60 pounds of available nitrogen per acre. The fertilizer shall be uniform in composition, free-flowing and suitable for application with approved equipment, delivered to the site in bags, bulk or other convenient containers. Each bag or container shall be fully labeled, shall conform to the applicable State fertilizer laws, and shall bear the name, trade name or trademark, and warranty of the producer. If the fertilizer is delivered in bulk, the Contractor shall certify that the fertilizer meets the specified requirements and shall furnish certified weigh tickets.

## 2.3 MULCH

The mulch shall be a vegetative mulch consisting of grain straw (oats, wheat, or rice) or grass hay.

## PART 3 EXECUTION

### 3.1 QUALITY CONTROL

#### 3.1.1 General

The Contractor shall establish and maintain quality control for fertilizing, seeding, and mulching operations to assure the compliance with contract specifications and maintain records of this quality control for all construction operations including, but not limited to, the following:

- a. Material. Type of fertilizer, seed, and mulch used.
- b. Application. Station to station limits of fertilizing, mulching, and/or seeding; area covered; rate of application; quantity of material used; method of distribution.

#### 3.1.2 Reporting

Three copies of these records, as well as the records of corrective action taken, shall be furnished the Government daily. The report shall be as prescribed in Section 01451 entitled CONTRACTOR QUALITY CONTROL.

### 3.2 COMMENCEMENT, PROSECUTION, AND COMPLETION

Finished dressing, fertilizing, seeding and mulching shall be accomplished as specified. Prior to or concurrently with seeding, the Contractor shall repair rainwash, if any, dress or redress the slopes, and prepare the slopes for seeding as specified herein.

### 3.3 FERTILIZING

#### 3.3.1 General

Fertilizer shall be placed after dressing, but prior to seeding. Fertilizer shall be distributed uniformly over the areas to be seeded and shall be incorporated into the soil to a depth of at least 2 inches by disking, harrowing, or other acceptable methods. The application of fertilizer shall not be performed more than 24 hours in advance of tilling

and may be a part of the tillage operation.

### 3.3.2 Sampling and Testing

The Contracting Officer shall be furnished with duplicate copies of invoices for all fertilizer used on the project. Invoices for fertilizer shall show the grade furnished. Each lot of fertilizer shall be subject to sampling and testing will be in accordance with the official methods of the Association of Official Agricultural Chemist. Upon completion of fertilizing, a final check of the total quantities of fertilizer used will be made against the total area treated, and if the minimum rates of application have not been met, the Contracting Officer will require the distribution of additional quantities of fertilizer to make up the minimum rates of application specified.

### 3.4 SEEDING

#### 3.4.1 Disposal of Debris

Prior to grading and tillage operations, all vegetation and debris shall be satisfactorily disposed of as stated in paragraph Section 02109 CLEARING AND GRUBBING paragraph DISPOSAL OF CLEARED AND GRUBBED MATERIAL AND OTHER DEBRIS.

#### 3.4.2 Tillage

After the areas required to be treated have been brought to the design grades, the fertilizer shall be spread and the areas shall be thoroughly tilled to a depth of approximately 2 inches by plowing, disking, harrowing or other approved methods until the condition of the soil is acceptable. All tilling shall be done lengthwise of the revetment. The work shall be performed only during periods when beneficial results are likely to be obtained. When conditions are such, by reason of drought, excessive moisture, or other factors, that satisfactory results are not likely to be obtained, the work will be stopped and shall be resumed only when directed.

#### 3.4.3 Seeding Periods

Seed shall meet the following analysis and be seeded at the following rates:

Seeding Period and Grasses to be Used	Minimum Purity%	Minimum Germination%	Minimum Rate Lbs/Acre
2 March - 14 September			
Hulled common Bermuda grass	95	87	15
Tall Fescue	96	80	25
15 September - 30 November			
Unhulled common Bermuda grass	95	87	15
Tall Fescue	96	80	25
Ryegrass	97	82	25
1 December - 1 March			
Unhulled common Bermuda grass	95	87	15
Tall Fescue	96	80	25
Ryegrass	97	82	25

#### 3.4.4 Certification

The Contracting Officer shall be furnished duplicate signed copies of statements certifying that each container of seed delivered is labeled in accordance with the Federal Seed Act and is at least equal to the requirements specified in paragraph SEED. This certificate shall be obtained from the supplier and shall be furnished on or with all copies of seed invoices.

#### 3.4.5 Seed Applications

Seeding shall not be commenced until completion of the design grade and cross section and shall be prosecuted at a reasonable rate during seasons favorable to such work until a growth of grass satisfactory to the Contracting Officer has been obtained. When conditions are such, by reasons of drought, temperature, high winds, excessive moisture, or other factors, that satisfactory results are not likely to be obtained, the work will be stopped and shall be resumed only when directed. The seeding may be allowed to continue during periods of drought provided the Contractor at his option, decides to water the area to the extent necessary for the proper growth of grass.

#### 3.4.6 Planting Seed

Seed shall be broadcast either by approved mechanical power-drawn seeders, mechanical hand-seeders, or other approved methods at the specified application rate. Seed shall be distributed uniformly over designated areas. Half of the seed shall be sown with the sower moving in one direction, and the remainder with the sower moving at right angles to first sowing. The seed shall be covered to an average depth of 1/4 inch by means of a brush harrow, spike-tooth harrow, chain harrow, cultipacker, or other approved device. Seed shall not be broadcast during windy weather. If inspection during seeding operations or after there is a show of green, indicates that areas have been left unplanted, or have been skipped, planting of additional seed in these areas will be required.

#### 3.5 MULCHING

Mulching shall be performed immediately after seeding. Mulch shall be applied uniformly on the soil surface at the rate of 1-1/2 tons (approximately 60 bales) per acre. Mulch shall be anchored into the soil with a mulch crimper. The mulch crimping equipment shall have straight, notched, dull blades no more than 10 inches apart and shall be equipped with scrapers. The mulch shall be applied by means of approved equipment suitable for such work.

#### 3.6 MAINTENANCE

The Contractor shall be responsible for the turfed area(s) while grass is becoming established to the point of acceptance by the Contracting Officer.

During establishment and prior to acceptance of the turfed area(s), the Contractor shall repair rain wash damage, if any, to the completed embankment at no additional cost to the Government. The turfed area(s) shall be maintained by mowing for the life of the contract. Turfed area(s) shall be mowed with approved mowing equipment to a height of 3 to 4 inches whenever the height of vegetation becomes 12 inches. When the amount of cut grass is heavy, it shall be removed to prevent destruction of the underlying turf. Should the Contractor fail to mow the turfed area(s) to

the limits as specified above, the Government will assume the responsibility for the mowing and deduct the cost thereof from any payments due the Contractor.

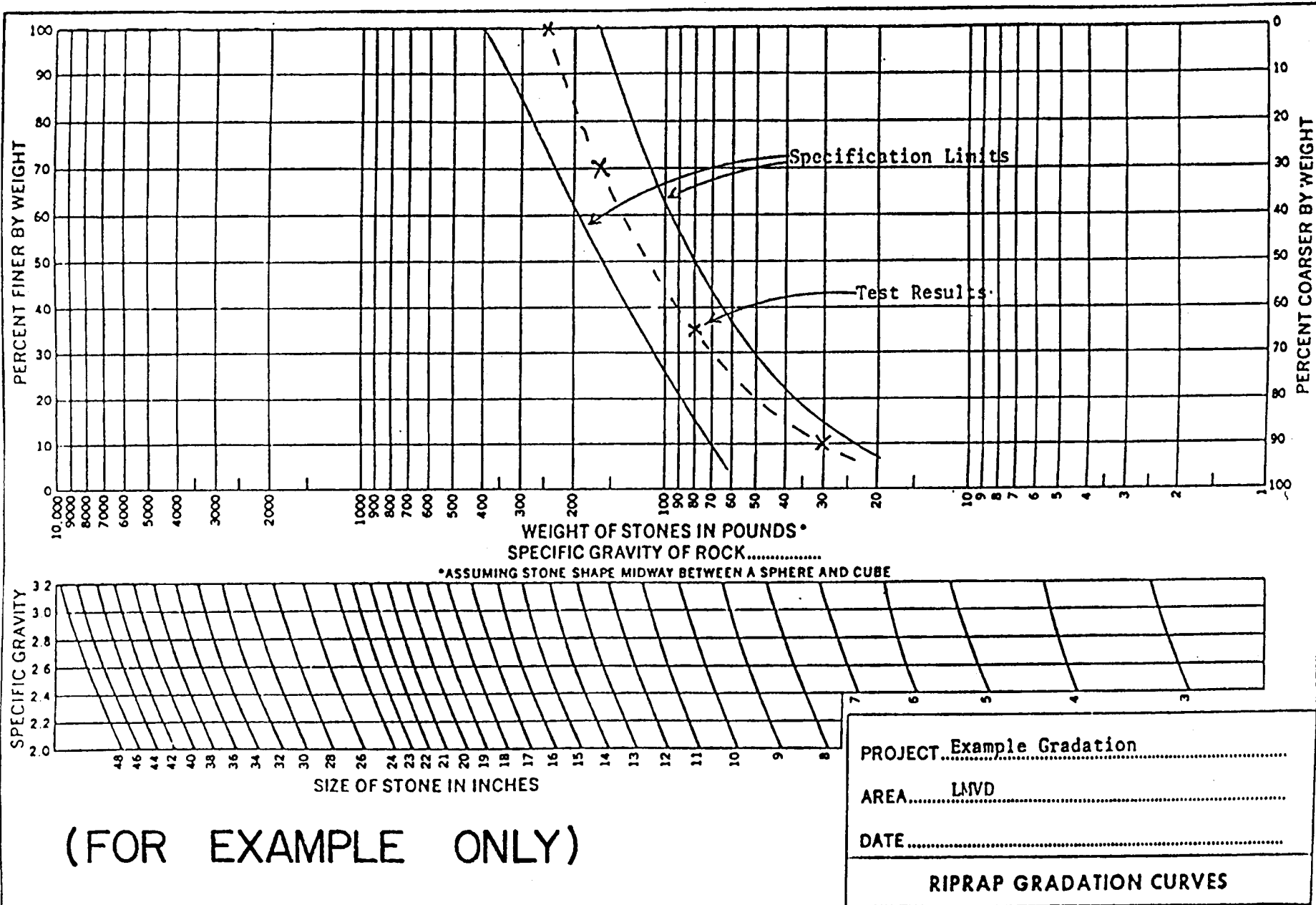
### 3.7 PROTECTION OF TURFED AREAS

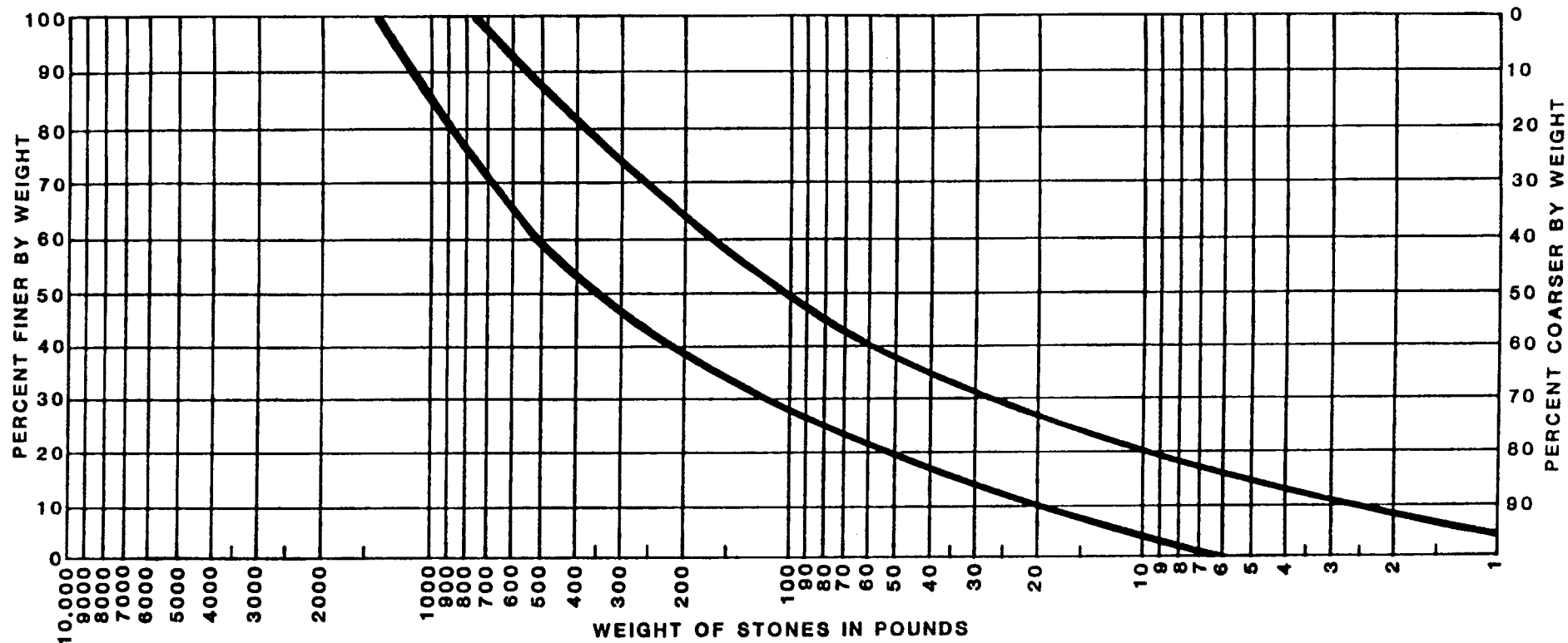
Immediately after turfing, the area shall be protected against traffic, livestock, or other use by erecting temporary fencing, barricades and providing signage as required, or as directed by the Contracting Officer Representative. All cost for temporary fencing, barricades, signage will be considered incidental to the contract.

### 3.8 DAMAGE TO SEEDING

The Contractor shall be fully responsible for any damage to the seeded areas caused by his operations. Areas that become damaged may be ordered to be repaired and reseeded to specification requirements, without cost to the Government.

-- End of Section --





STONE WEIGHT  
POUNDS

1200  
750  
200  
50  
10  
5  
1

CUMULATIVE %  
FINER BY WEIGHT

100  
72-100  
40-65  
20-38  
5-22  
0-15  
0-5

GRADATION  
GRADED STONE B  
MAY 1975